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ABSTRACT

This case study examines solutions to infant malnutrition in Africa from an interdisciplinary perspective, identifying factors that directly or indirectly influence practices involved in feeding infants from birth to age 3 in Maradi, Niger. The study begins by providing a conceptual framework and description of the approach used in the analysis, emphasizing the need for analysis at the city, household, and individual child levels. The study then provides a detailed analysis of the city environment, focusing on demography, health, social life and organization, and economics. Various situations in the urban population, including geographic disparities and family standards of living, are discussed. The study examines food and diet-related behavior, specifically describing food preparation, sources of food, and social activities related to food. Detailed analysis of mother and child relationships includes descriptions of infants' daily food intakes and mothers' behavior toward their infants. The study concludes by summarizing constraints and strategies mentioned throughout the study, and suggests general guidelines for a comprehensive approach to addressing the problem of infant malnutrition in urban Africa. (MM)

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30th Year

CHILDREN IN THE TROPICS

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SOCIAL APPROACHES TO INFANT FEEDING IN URBAN AFRICAN SETTINGS

1992 - N° 201

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INTERNATIONAL CHILDREN'S CENTRE – PARIS

The International Children's Centre was created by the French government in 1949, on the initiative of Professor Robert Debré in particular, following negociations between France and the United Nations. Its purpose was to furnish those international and national agencies dealing specifically with child care with training facilities and educational and informational tools in the field of child health and development, viewing children within their family and surroundings.

ICC soon turned essentially toward Third World children and devoted its activities to the training and education of personnel with social, educational and administrative responsabilities as well as medical and paramedical workers. The desire for greater efficiency has led it to work increasingly with trainers and to concentrate its efforts on the methodological and educational aspects of mother and child care programmes.

ICC is also engaged in an attempt to further study — and — action on some aspects of the life and health of children and their family, so as to contribute to practical improvement, particularly in the fields of growth, nutrition, planned parenthood, the control of transmissible and nutritional diseases, preschool and school education, the needs of disabled and underprivileged children, etc.

Over this period of more than 30 years, a large amount of documents on children and adolescents, mostly from the developing countries, has been accumulated. This international documentation has been classified and sorted out, and has been computerized since 1983 : a bibliographic data base (BIRD : « Base d'Informations Robert Debré ») may be consulted anywhere in the world, through international communications networks. ICC also publishes periodicals, educational documents and specialized bibliographic bulletins.

As for its legal status, the International Children's Centre is a foundation under french law of recognized public utility, administered by an executive board with broad international membership.

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FOREWORD

The purpose of the present document is above all methodological and educational. It takes the form of a case study. The data used were taken from a research programme conducted in the city of Maradi, in Niger, by a crossdisciplinary team from the Health, Societies and Environments laboratory of University of Bordeaux 2.

The actual results have been somewhat simplified, for the sake of clarity of presentation, so that although these data are perfectly true to the findings, their discussion cannot be viewed as a scientific research report. Moreover, the case study method proposed here is appropriate to the conditions prevailing in this theoretical case, and does not correspond exactly to the method effectively applied in the field. For this reason, the place in which this example is applied is not named. The detailed results of the actual research project have been and will again be the object of scientific publications.

The subject matter on which the present discussion is based could not have existed without the collaboration of a number of people : the author, who also headed the project, is indebted to them. He nonetheless takes entire responsibility for the use to which the data are put here.

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INTRODUCTION

The method most frequently adopted in Africa for dealing with infant malnutrition is based on the regular monitoring of growth in the majority of children during the first years of life, so as to :

- detect children at risk of malnutrition or already malnourished, at consultations for healthy or ailing infants ;

- direct malnourished children and their mothers to the social services ;

- apply a protocol for care involving one week of demonstrations on enriched porridges (containing millet flour, beans, peanut cakes and/or sugar) to be attended by mothers, followed by 12 weeks of weekly monitoring of the weight curve.

In the last analysis, this often yields rather mediocre results. While mothers do attend demonstrations when the ingredients are provided free of charge, very few of them actually apply what they have learned at home, and even fewer comply with the weekly follow-up. This method therefore seems to be inappropriate to the sociocultural features and material constraints of the communities to which it is applied.

This lack of success raises the question of the approach that would correspond best to the local social and economic realities, and would, accordingly, respond to the following two requirements :

- be based on a satisfactory understanding of the human environment, its potentials and its constraints ;

- generate active participation not only of mothers, but also of those individuals or groups which may play an active role in improving children's diet.

In the last analysis, we are faced with the need for a comprehensive, crossdisciplinary approach which would not confine itself to mechanically following a preconceived path based on a strictly operational logic and designed for no situation in particular, but would take two essential needs into consideration :

- the identification and consideration of factors of various sorts, in each specific local situation, which influence practices with respect to children's diet ;

- the consideration of the many problems possibly raised by long-lasting modification of such practices, over and beyond those involved in the learning of a few simple techniques.

Our purpose here is to provide a concrete illustration of a series of theoretical concepts and methodological practices which may be used in actual operations so as to progress in the subtle, diversified understanding of a community, without losing sight of the ultimate objective, which is to achieve improvement in the nutritional situation of infants.

To unfold these concepts and present these methods, we will imagine the situation of an official in charge of setting up a programme for the improvement of food and nutrition in a city in sahelian/sudanese Africa, where malnutrition prevails : this official attempts to construct

the tool for understanding the environment, which is necessary for the success of the enterprise. This example corresponds to a very real situation, but it is the approach itself which is important, rather than the description of any specific case. The lessons to be drawn are of a general nature ; hopefully, they will inspire other approaches and will be applied to other fields, be they third world cities, or even rural settings.

The path followed is one that occurs naturally to any worker who is external to a situation and wishes to foster change within a given human community. In sum, it is an effort at gradual comprehension, moving from the general to the particular place and to the individual, from the obvious and most visible to the less evident and more immaterial.

We will proceed step by step, and will constantly attempt :

- to clarify the questions that arise with respect to the human environment, given the objective pursued ;

- to identify the investigation methods that may afford some response ;

- to present detailed data which illustrate the possible outcome of the recommended approach when applied to the concrete reference situation.

Our approach will be deliberately crossdisciplinary. This means that while our view of social realities is an anthropological one - aimed at entering into contact with people's experience instead of dissimulating it behind an image constructed elsewhere - we will not hesitate to resort to methods which conventionally belong to other fields, including geography, economics and epidemiology. This, in our opinion, is in keeping with the foundations of the anthropological approach.

Rather than approaching a society through its parts, anthropologists are set on apprehending it as a whole, within which all aspects interact : the economic and social, the material and the symbolic, the biological and the relational, the general and the singular, all are so many angles and planes of a same reality.

It is here, in the observation of human behaviour and social facts, probably more than anywhere else, that one becomes aware of how arbitrary it is to cut knowledge into different disciplines : there is in fact no such thing as unidimensional behaviour - exclusively economic, totally symbolic, guided only toward the satisfaction of a biological need. Many readings of such a behaviour are always possible, and change - be it the fruit of deliberate action or the outcome of a spontaneous evolution - occurs through a complex dynamic involving numerous factors of which it is the result.

Any attempt to oversimplify reality produces a caricature and loses contact with it. We should not hesitate to approach it as it is : complex and varied. The question remains, however, of how to tame this complexity and variety through understanding.

This is the true object of the present issue, using food and nutrition as an illustration.

CONCEPTUAL FRAMEWORK AND RESEARCH APPROACH

We will use concrete examples taken from the analysis of a specific situation to show the "real-life" process of understanding human realities.

THE CONTEXT

Let us outline the overall context in which this local case is situated. Although no field intervention can control what happens in the general geographic area in which it is located, these occurrences nonetheless generate constraints and potentials which must be determined when visualizing any action. Too many projects pay insufficient attention, in their very conception, to the environment on which they will necessarily depend, and their horizon is limited to the narrow framework in which they are to take place.

Here are a few points of reference - which in fact sketch out a pattern corresponding to the situation in many countries in the part of Africa discussed here.

This type of information may be found in any book containing a broad description of a country, and there is no use in discussing how to collect such data.

Geography and demography

This is a country in the sahelian/sudanese area, completely enclaved , with a semi-arid climate (annual rainfall ≤ 600 mm), suffering from repeated pluviometric deficits over the past fifteen years).

The most important crop grown for home consumption is millet (small millet and sorghum) ; cash crops (peanuts and cotton) and the exportation of cattle bring in some income. The farming season is concentrated in 4 months (the rainy season) and the entire year's food resources depend for the most part on what is harvested at the end of that short period.

The majority of the population (80 %) is composed of sedentary farmers, while nomadic herders represent a sizeable, economically and politically influential minority. The country counts 8 million inhabitants.

Overall demographic growth is very rapid (3 % yearly, meaning that the population doubles every 25 years). Urban growth is even sharper (8 % annually, or a multiplication by 6 in 25 years).

The city population only represents 15 % of the total population of the country, however, and it maintains close ties with the rural world (frequent visits, help for relatives who still live in the village, participation of many city-dwellers in farming activities). Most of the latter population lives in the capital (less than one million inhabitants) and in 6 smaller cities with a population ranging from 50,000 to 200,000. The population is extremely youthful : about 50 % are under age 15 and nearly one fourth are under age 5.

Economy and subsistence farming situation

Since the country's economic and industrial development is extremely limited, the increase in the urban population does not correspond to an increase in employment. Most new city-dwellers have no stable job and make a living doing precarious, marginal work.

The repeated droughts, combined with desertification and the exhaustion of soil fertility, periodically cause food shortages (every other year, on the average, over the last 15 years).

Production for consumption remains the main source of food, but it is increasingly necessary to import grain, either through aid or purchases, to cover needs. Some of it is distributed by charitable agencies : most is in the hands of a National Marketing Bureau. The private sector does play an important role, however, especially for internal commercialization.

The price of indigenous staple grains (millet, sorghum) fluctuates wildly from year to year (it may be multiplied by as much as 5, depending on the rainfall that year) and considerably from one season to another (it may double between one year's harvest and the following growing season). When shortages occur, city-dwellers with low incomes often experience difficulty in covering their food needs.

The country is severely indebted and is currently engaged in a period of economic adjustment imposed on it by the major international finance agencies (World Bank, IMF), and which consists essentially in the state's withdrawal from the economic scene and encouragement of the private sector, particularly in the field of commercialization of farm products.

Health situation

The health system is entirely controlled by the government : MCH centres, rural and urban clinics, district hospital centres located in cities. Care is free of charge, but patients must purchase their drugs. These are delivered by a network of state-owned pharmacies. There is also a parallel circuit for illegally imported drugs. Traditional healers are also frequently consulted.

Health coverage for the entire country averages one doctor for 50,000 inhabitants and one nurse for 20,000. In the cities, the situation is much better : the coverage may be 5 to 6 times higher than in the country.

Health units tend to be much more frequently attended in the cities than in the countryside, where attendance is very low.

Childhood malnutrition affects the country as a whole, but to differing extents depending on the situation. The problem is worst in the camps where farmers and nomads suffering from the drought take refuge, whereas the cities are relatively spared. Childhood malnutrition still remains a real problem there, however, despite medical coverage and a more favourable environment (drinking water, for instance) (cf. figure 1).

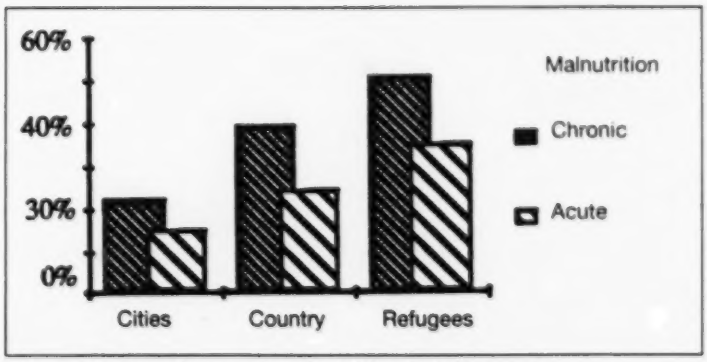

Figure 1 : Prevalence of malnutrition in the country.

In the cities more than anywhere else, it is obvious that malnutrition cannot be solved by an approach strictly confined to the health aspect : a denser health network and improved environment are clearly

quite insufficient. A broader approach is needed ; one which considers the numerous factors that help to shape the health situation.

These general reference points outline the constraints prevailing in this country. Although they must be kept in mind, they are far from sufficient for the identification of the specific problems that characterize a local situation. We must go from the general to the particular, and to do so we must devise an appropriate diagnostic strategy which serves the programmed action. This is extremely important, and designates the challenge : it is important not to get caught up, at the start, in a set of issues that are too narrowly confined to the concrete objectives of the intervention. The ultimate question with which we are faced in the case discussed here is of course what access young children have, concretely, to food, the corollary being : what are the possibilities of improving the situation? However, if we are to progress beyond the approaches used until now with such limited success, it is essential to gain a broader perspective, and to view the dietary practices affecting infants as the outcome of a combination of factors whose origin is quite far upstream of these practices themselves.

THE APPROACH

In attempts to comprehend a situation as a whole, rather than to answer a specific question, the danger resides in the temptation to move in all directions at once, somewhat blindly, with no well-defined approach. The risk is even greater when the measurement of a few well-defined indicators is viewed as insufficient, and the integration of descriptive and qualitative findings, pertaining to the social and cultural aspects in particular, is desired.

Two main rules must be respected before beginning to collect information : first, define the issue, then define a framework for approaching it.

DEFINING THE ISSUE

The objective is the identification of those factors which possibly influence - directly or indirectly - practices involved in feeding infants from birth to age three, in the city where the programme is to be conducted.

There is a widespread tendency to view this problem at the individual level only : how do parents, and mothers in particular, act? As a result, the observed facts are interpreted in terms of mentalities, habits or conservatism. Actually, individual practices are always responses to constraints and incitements, which operate at several levels and correspond to differing logics. If they are to be understood, then, it is important that they be consistently resituated in this broader framework.

Levels of analysis

Broadly speaking, three main levels may be defined. First, there is the city, viewed comprehensively as an environment, with its hazards and its advantages ; then there is the level of smaller social and spatial units, within which the everyday life of city-dwellers takes place, and where they attempt, day after day, to solve their problems, and especially their food problems, and last, there

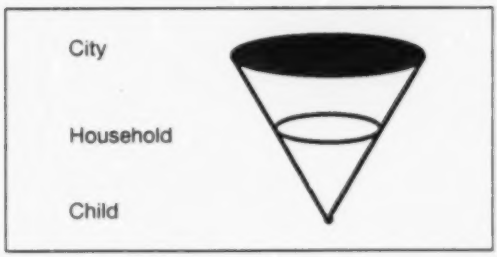

Figure 2 : Levels of analysis

is the immediate social and material environment of infants - including, above all, their parents (cf. figure 2).

The first working postulate may be that the factors possibly affecting the nutritional status of infants are scattered over these three levels, with each level affecting the others : the overall constraints of city life have consequences on households, and through these, on children's environment. Each of these levels covers a very broad spectrum of facts, however. How can some order be introduced in all this, given your particular concerns?

Collective logics and behaviour

Here too, it is important to go beyond the strictly individual behavioural approach to the problem, and to become aware that children's parents belong to social groups and are therefore subjected to collective logics which influence their personal choices and practices.

The term "logic" is used here to mean the combination of factors - some material, while others are norms, values and symbols - which are interrelated and generate compelling patterns to which individual behaviour conforms. For instance, when peasants work in a field, the chain of interrelations includes environmental factors, the tools used and the technical processes performed (both tied to some skill), how work is organized (each person's status and role) and last, the farming objectives pursued, which in turn depend on the social values prevailing in the group.

These all form a whole which must be somewhat coherent, failing which it will be unsuccessful and abandoned. It may be relatively easy to change one aspect of this chain, provided this does not create any major incompatibility with the other elements : a tool may replace another if it does not challenge existing conceptions frontally, or modify the organization of work, at least not to the detriment of those people with decision-making authority (if the emancipation of youth threatens the elderly, for instance), and if it does not directly challenge the objectives of production (abandoning a socially valued crop for another, more saleable one). In the opposite case, disagreements and contradictions arise, and lead either to pure and simple rejection of the change, or to a crisis, possibly ending in a new balance, but also, eventually, in a break.

This is a simple example, but the same reasoning may be applied to practices touching on housing, health or nutrition. The point is that individual behaviour patterns are necessarily dependent on these chains of interrelations which we call logics because they are coherent with respect to the social objectives that structure them.

A comprehensive approach to the issue of children's diet requires that these logics be deciphered and analysed at several levels. These logics may be divided into four categories.

Logics of individual and group reproduction

A group, or human community, exists through its members. The number of members, the categories into which they are divided and their respective proportions (sex, age) are major parameters

for the description of a human population and, in fact, for any population of living beings. These quantitative facts affect how it functions (organizational problems increase with size, for example) and they may generate decisive constraints, in terms of the balance between needs and resources, and especially food. Every community must therefore come to terms with its numbers, in one way or another.

Similarly, the health status of community members (their mental and physical integrity) determines the latter's capacity to survive and to perpetuate itself over time, especially through the size and quality of the reservoir of manpower at its disposal, as well as by the offspring it produces. Concern with the health of its members is therefore an imperative one for any community that wishes to survive, and each works toward it in its own way. Access to food is essential in this respect.

Taken together, all of the constraints affecting any community in the field of health and demography, along with the strategies it may implement to respond to these and to perpetuate its existence, constitute the logics of individual and group reproduction. Many individual traits, particularly with respect to food and nutrition, cannot be understood apart from this broader context.

Material and technical logics

Every community lives in a relationship with a material environment, which exerts its constraints, but has also been partially fashioned by the community, over time. If this relation is to be a lasting one, technical systems must maintain a certain balance with the physical and natural environment to which they are applied. It is obviously impossible to do anything, anywhere, without suffering the consequences. Housing, agriculture, but also cooking techniques, are indicators of how a group adjusts collectively to its environment, and represent a coherent combination of available materials, tools and knowledge.

To a large extent, the setting in which individuals live and the techniques practiced by them are the historical product of this adjustment. The latter is never perfect, of course : whatever its gaps and dysfunctionings, particularly in the eyes of an observer whose viewpoint has been forged by the experience of scientific evidence, it nonetheless has an internal logic of its own. This logic reacts to the introduction of new techniques and tools, either by resisting to their adoption, or by making adjustments that make them assimilable. An operation aimed at modifying behavioural patterns involving a technical aspect (and everything touching on food and nutrition is in this category) cannot be successful if it does not take into account the effects on the technical systems involved.

The logics of social organization

Too often we tend to view the ultimate objective of human communities as their physical reproduction or survival. They would of course cease to exist if they had no members, but again, communities cannot subsist without the sense of belonging and identity which they confer on their members. This feeling is based on symbolic values, shared images and a given organization of interpersonal relations, characterized essentially by specific relations of soli-

darity, complementarity and hierarchy based on age, sex, birth, acts accomplished...

In the functioning of many human communities, the preservation of societal values, social relations and their reproduction over the years may be more central than the procurement of simple material well-being. In Africa, for example, the intrafamilial distribution of food may be more the expression of the respective social statuses of father, mother and children than of their physiological needs. Similarly, perhaps certain mutilations, which may be viewed as humanly injurious, are ways of expressing male and female identity, and perceived as such by those who inflict them, but also by those on whom they are inflicted.

Groups whose ability to entertain a sense of identity among their members is impaired may be deeply disorganized : the forces which work toward preventing such disorders are therefore essential for the perpetuation of a community. Individuals are obliged to take this social pressure into account, and often experience difficulty in avoiding it. Of course, no situation is set once and for all, and change may occur, but the ensuing readjustments are often conflictual. They may in fact sometimes lead a community to disappear. It is essential that this context be determined before interpreting individual responses to an outside proposal, and it should be clear that modification of these responses is not the result of personal choice only.

Logics of economics

There is practically no longer any human community living totally outside the market economy : at one point or another every community meets up with buying and selling, and handles money. In cities, money often changes hands daily. Even when non-mercantile exchanges are still lively (in the form of gifts, for instance) and when a non-negligeable subsistence agricultural sector exists, individuals and families procure most of the items they need at the marketplace or in shops. Conversely, they acquire the income required for these purchases by selling their labour or working at a craft or at trade.

The market economy has a logic of its own, which especially takes the form of price-setting mechanisms. The strategies of social actors, especially in the field of food, must necessarily adjust to these incitements and constraints. It is important to understand how they achieve this, then, before attempting to change their behaviour.

Further remarks

First, these different logics are obviously interdependent. For instance : social strategies (for prestige, for example) have an economic cost and are often dependent on the logic of the market. Nonetheless, from an analytical as well as a practical point of view, it is useful to differentiate these, to make them more comprehensible.

Secondly, each of these logics is closely tied to the set of shared beliefs, representations and values, as well as to the practical or speculative knowledge of the specific community : in other words, to its culture. Culture is not a separate field, governed by religion

and "superstitions". It is present in every aspect of social life : health, techniques, interpersonal relations, economic behaviour. It represents each society's specific philosophy, its original way of viewing the world, and its knowledge. It is important to attempt to determine the principle ways in which a culture manifests itself in the practices that are to be analysed, without having the pretension of achieving its complete understanding.

DEFINING A CONCEPTUAL FRAMEWORK

The levels at which information is to be collected have now been defined : the city, everyday life units and the child's immediate surroundings. At each of these, the factors susceptible of influencing the way the food problem is approached, more or less satisfactorily, and solved by city people must be located. To do so, the collection of information is oriented in four directions corresponding to the four above-mentioned logics.

The result is a crossdisciplinary grid for analysis (cf. figure 3) (1) :

Axes / Levels	Demography, health	Living conditions	Social life	Economy
City				
Household				
Child				

Figure 3 : Grid for analysis

For the concrete implementation of this overall framework, there is no need to begin by constructing a complete plan for work : that is, by filling in every box on the grid. A gradual approach is preferable ; one which starts with the broad realities and slowly integrates increasingly subtle aspects, as the observation progresses. The data collected at each step contribute to refining the working postulates and making them more accurate, so as to be increasing selective at the next phase.

1) This grid is shown at the beginning of each chapter, to identify its contents.

COMPREHENSIVE APPROACH TO THE CITY

Axes / Levels	Demography, health	Living conditions	Social life	Economy
City	X	X	X	X
Household				
Child				

Let us begin by getting an overall view of the city, without losing sight of the main objective, which is to identify those factors that may affect city people's diet. The analytic axes are the four logics shown on the grid (cf. figure 3). It is of course out of the question to launch a complete research programme to learn what we need to know in order to act. Whenever possible, information that is already available should be used, and a specific data-collecting procedure set up only when absolutely necessary.

Where can this information be found?

In documentation

In different parts of Africa, research is gradually accumulating over the years : it constitutes a mine of unexploited information. The most difficult part often resides in discovering the existence of this research, and procuring it. However, in the past decade many documentation centres have sprung up in universities and research centres, and within national administrations and international agencies (the CILSS for the Sahel region, for example). In addition, bibliographic listings are published periodically (by the OECD for instance), and may be quite helpful.

Routine document-collecting should always be planned during the first phase of an intervention programme. Quite often, many errors might have been avoided had this precaution been taken. The list of works should be as wide-ranging as possible, so as to obtain a complete view of what is available, and documents may then be selected and procured according to needs.

The establishment of a bibliography is a relatively demanding job for which few project officials have time. When there is no assistant to whom this task may be entrusted, it should be recalled that increasing numbers of students (of geography, for instance) do this type of work when writing a memoir or a thesis. By contacting teachers from local colleges, the collaboration of one such student may be secured in exchange for logistic support, or in some cases, payment.

In other departments

The experience accumulated by various administrative and technical agencies also represents a valuable source of information, provided the right questions are asked. Officials in charge of the different sectors affected by the planned action should be visited, not simply to present the project, but also to bring them to participate in the initial reflection.

By direct observation

Once the possible sources have been investigated, one must also take advantage of personal observations, even if they are somewhat superficial. By travelling the city's streets, one after the other, and recording a number of concrete facts (housing, types of activity, sanitation, for example), much may be learned. The same is true of visits to the local market to see what is sold, and at what price.

Let us see what results may be achieved in the reference case, when the grid is applied and the simple methods recommended here are utilized. Although the situation reconstructed here is based on a real local case, it definitely will not be found to be the same everywhere : difficulties may arise here or there, whereas they have been solved in the present example. This is not a rigid model, but a reference case designed to help people to get their bearings, and to make the adjustments required by the specific situations with which they are faced. Let us take a look at the broad lines of analysis (axes) defined above.

DEMOGRAPHY, HEALTH

URBANIZATION

This is extremely rapid throughout the country (cf. figure 4). It is important that this growth be evaluated as accurately as possible for the city in which the intervention programme is to take place, since rapid population increase is a typical example of a mechanism whose collective dimension generates constraints that have unavoidable repercussions on every aspect of life. Increasing numbers of city-dwellers means more and more mouths to feed and people needing medical care : the more rapid the growth, the more difficult it is to satisfy these needs.

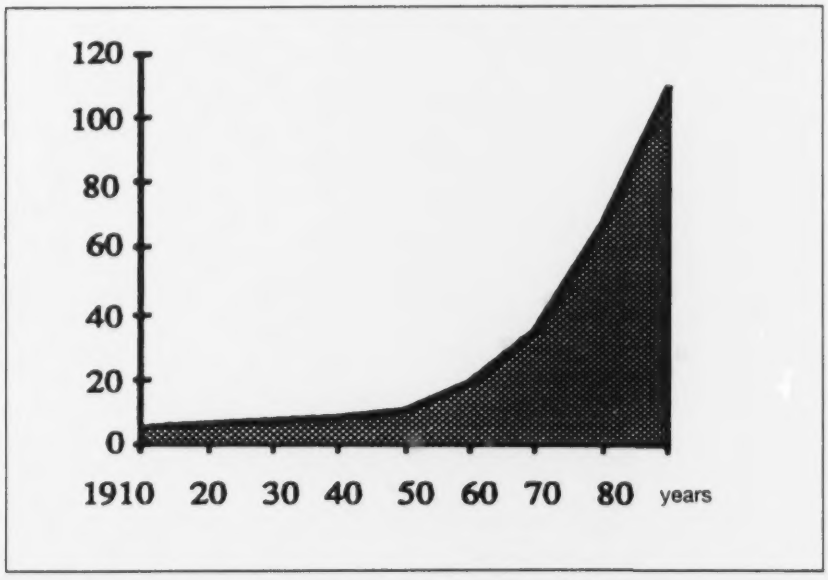

Figure 4 : Evolution of the population (thousands of inhabitants).

The bibliography contained a thesis in economic geography in which a retrospective study was conducted. The findings are shown in figure 4. The mean rate of growth for the latest period is 8 % yearly ; it is the same as the mean rate of urban growth for the country as a whole. The present population of the city is estimated at 100,000 inhabitants.

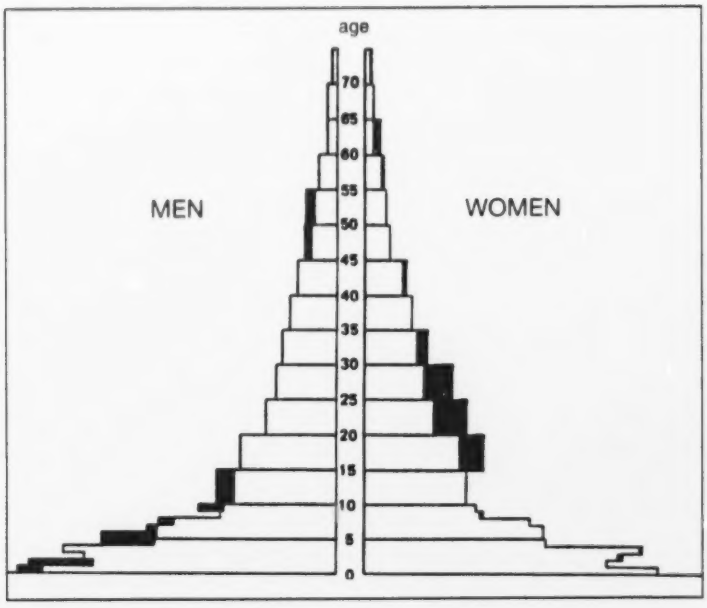

Figure 5 : Age pyramid

Birth :	58.5 ‰
Mortality :	18.5 ‰
Infant mortality :	115 ‰
Childhood mortality (1-4 yrs) :	36 ‰
Natural growth :	40 ‰
Migratory growth :	40 to 60 ‰

Figure 6 : Mean annual rates

The national census, dating back to three years ago, provides age and gender-linked tables on the basis of which a pyramid may be drawn (it is shown in figure 5). It is typical of rapidly developing cities ("new towns" in Europe, third world cities) and also shows that there are more women residents than men, without providing any explanation of this finding (polygamy and prostitution are some possibilities).

Since no specific demographic study could be found which provided more detailed data on the city in which you are working, you confine yourself to extrapolating the overall figures published by the national census for the country's cities (cf. figure 6). These point to extensive migration, the high birth rate (5,800 newborns a year if the overall rate is applied to the population of M...) and the alarming infant and child mortality rates : 1 child out of 4 dies before the age of 5.

THE HEALTH SITUATION

Once we have an idea, however general, of the population of the city, its demographic structure and how fast it is growing, it is preferable to establish a more detailed picture of its health status. To do so, the exploitation of data available at the local antenna of the ministry of health yields some of the usual indicators.

Reports by health services provide some idea of the health facilities available in the city. Overall data shows that this target city benefits from a relatively satisfactory situation in comparison with the national average for urban areas : one doctor for 8,500 inhabitants, 1 midwife for 8,500 inhabitants as well, and one nurse for 2,500 inhabitants.

A look at the spatial distribution of health units throughout the metropolitan area (cf. figure 7) shows that the northern part of the city is underequipped, whereas the hospital and three of the 4 clinics are located in the centre and to the south. Furthermore, there are major differences in the manpower and material resources available at the different MCH centres. One of these is in a particularly privileged situation, since it is directly attached to the family

Figure 7 : Location of clinics

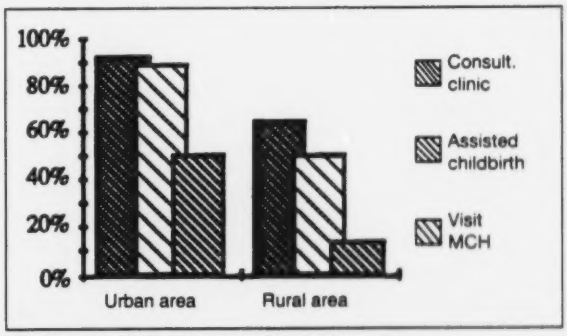

Figure 8 : Attendance of health units

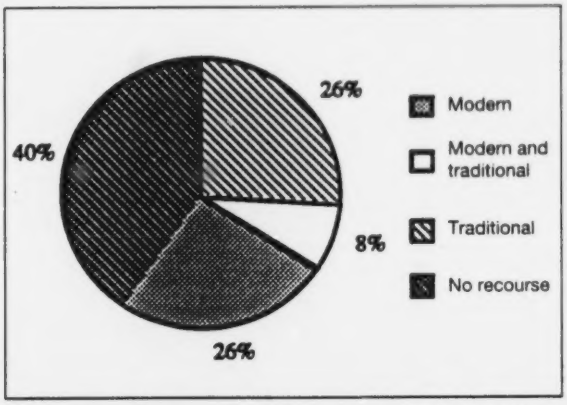

Figure 9 : Recourse to different types of medicine

welfare benefits bureau, whereas another, in existence for some time, suffers from decrepit facilities and insufficient staffing.

A national survey was conducted by the ministry of health, with backing from an outside scientific assistance agency. Data on the city and the district were published in in-service documents and yield valuable information on attendance of MCH units (cf. figure 8).

There is every indication that attendance is assiduous during the first 2 years of life : almost all childbirths take place in a maternity, the vast majority of infants have a health record booklet and BCG vaccinal coverage, although not total, is considerable (80 % between 0 and 9 years). It is much lower for the other vaccines (measles, tetracoq), however.

A thesis written by a medical student, dealing with the types of medical care resorted to by the residents of the city of M... is rather vague, but nevertheless yields interesting information. We learn that the medical help sought (there is no information on the nature or seriousness of complaints) is evenly divided between traditional healers and the modern sector (cf. figure 9).

The expression "traditional medicine" clearly refers to a complex situation that cannot be depicted by a few rough figures. Nevertheless, this study does draw attention to the fact that traditional medicine remains vivacious, despite proper coverage of the city by the modern health system. This indicates that it must respond to some specific demands.

While analysis of written reports on health yields an overall picture of childhood pathology in the city, these data are insufficient for estimation of the rates of prevalence. However, the frequency of certain reasons for consulting is indicative of the impact of some of the most common childhood conditions : diarrhoea, fever, respiratory ailments, measles and rashes.

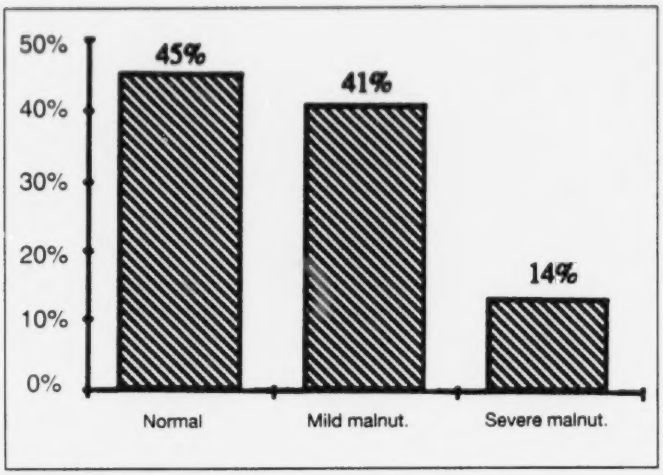

Figure 10 : Malnutrition

In itself, childhood malnutrition is practically never a cause of consultation. An epidemiological survey conducted by a team from abroad is available. The anthropometric indicators of malnutrition used for this operation were rather unusual (arm circumference/head circumference, Kanawati and McClaren indices), making its comparison with other studies done elsewhere difficult. These findings corroborate the extent of the problem of childhood malnutrition in the city where the programme is to be implemented : less than half of the children examined had a satisfactory nutritional status (cf. figure 10).

LIVING CONDITIONS

Nutritional status is affected not only by the food and dietary situation, but by many other environmental factors as well. These include sanitation, housing and access to running water.

Observation of the living conditions prevailing in the city and investigation of possible discrepancies between neighbourhoods is therefore extremely useful, during the exploratory phase. These differences may be helpful for the formulation of initial hypotheses as to social inequalities, health-related inequalities and those population groups requiring priority.

While a complete description of the urban setting demands long, thorough investigation, an acceptable approximation may be achieved by the use of simple methods.

At this point, three elements may constitute indicators reflecting living conditions, and help to identify disparities : housing, the cleanliness of streets and sanitation, and last, the availability of drinking water.

These are of course only external, descriptive criteria which do not tell us how specific households actually deal with their immediate surroundings.

But observations of this type do yield some indication of the overall constraints operating in the city and of the local variations within it, when these exist.

Methodologically speaking, the importance of mapping as a tool for the synoptic representation of the spatial aspect of data cannot be over-emphasized. Neither you nor the other members of your team are familiar with this technique. You have therefore called

upon college students of geography. You asked them to draw up a series of simple maps of the city, and to map out the three above-mentioned criteria, in the framework of their memoir, and with the methodological support of their teachers. Using the maps found at the city's urban development department, the students proceeded to scale them down and to draw up an easy-to-handle document (0.40 x 0.50 cm). After some field checks, they came up with a final basic document, on which various data may now be recorded. Three maps were then made: one for each theme.

HOUSING

The idea is not to draw a fine, detailed picture, but simply to point out the main geographic disparities with respect to housing. During a first trip around the city, several categories of buildings were identified and the more modest of these were distinguished from the most luxurious ones ; such differences presumably indicate differing living conditions for their occupants (cf. figure 11). Next, students charted the town thoroughly, systematically following cross sections according to a grid-shaped pattern. For each block of buildings encountered on their way, they marked the frequency of constructions of each type (classed on a scale, from 1 to 4) on their specially designed map.

Figure 11 : Geographic distribution of housing

Some aerial photos, although quite old (10 years) and talks with urban development officials who know the city well (and especially with a team from a German assistance agency working on a city sanitation programme) then made it possible to extrapolate these findings and to define areas characterized by various combinations of buildings.

The outcome, shown below, points to considerable differences within the city. At the outskirts, straw huts huddle together to form a wretchedly poor, precarious housing area. In the centre and to the west, constructions are homogeneous, built using the traditional mud wall technique. To the north there is a mixture of types, in which modern materials are the majority but mud houses and straw huts are still well represented. Last, one well-defined neighbourhood contains constructions built of modern materials and European-style private homes.

SANITATION AND CLEANLINESS OF STREETS

The map shown in figure 12 was drawn using the method described above : systematic travelling around the city, with map in hand. In addition, the German assistance agency which had been working on the city's sanitation system for several years had already conducted studies on how the city's rubbish and household refuse is managed. They had clearly identified the "problem" areas : the western part of the city, which receives the drainage canals from all the rest of the city, and the lay of which is conducive to the accumulation of refuse carried there by streaming water : the east, with its concentration of straw huts which, unlike the rest of the city, have no latrines.

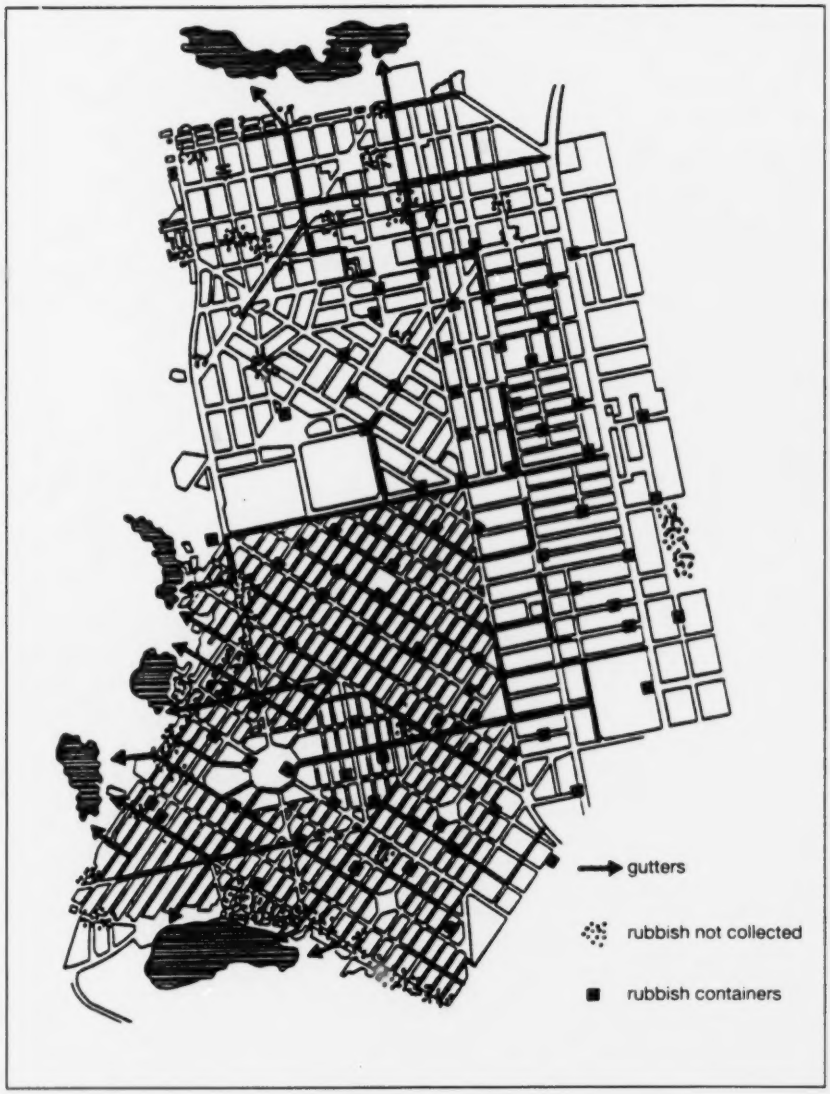

Figure 12 : Sanitation and cleanliness of streets : infrastructure.

The city has set up a system for the collection of household refuse through the use of large containers placed at some locations. The northern part of the city has not yet been equipped, so that rubbish tends to accumulate at some crossings. The widespread use of these containers was achieved through a sensitization campaign with the participation of neighbourhood authorities, along with a form of coercion exerted by the municipality (fines).

WATER SUPPLY

The city is relatively well equipped with piped drinking water. It reaches consumers in two ways, which complete each other : street fountains, maintained by the town hall, where water-carriers draw water and deliver it to their clientele, and direct piping to the homes of people who have a contract with the supply company.

Practically all of the water consumed by city residents comes from the city supply system. There are no private wells, and the temporary water holes bordering the city to the west are used only to water animals.

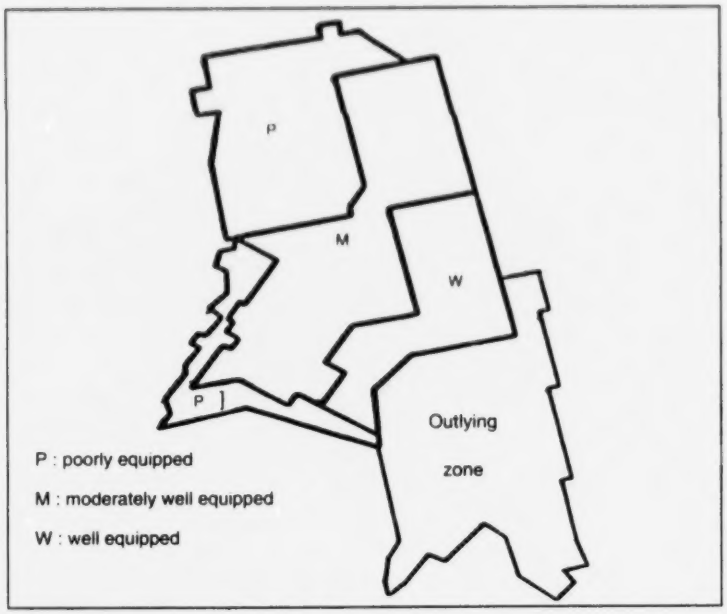

Figure 13 : Geographic distribution of water supply (private and public).

The geography students drew up a map (cf. figure 13), using the list of consumers and documents provided by the municipal urban development department, along with surveys performed previously by the German assistance agency : the city is seen to be quite densely covered by the water supply system, on the whole. Some gaps do exist in the northern part, however, and on the western outskirts. The straw hut area to the east (not shown on the map) is not equipped at all. Clearly, the extension of the public water supply system is unable to keep up with the excessively rapid rate of growth of the city.

SOCIAL LIFE AND ITS ORGANIZATION

The accelerated urban development experienced by third world countries at present is often claimed to result in a breakdown of the structures that traditionally ensured social control and integration, and specifically of the kinship and political relations. In contemporary urban societies, then, social relations are considered to be characterized by less community solidarity and by the development of competition between individuals.

Wherever this trend is observed, it is likely to have an impact on people's food security. Indeed, in societies with a low level of technological development, where productivity is low and the threat of want is everpresent, social redistribution, in different forms (mutual aid, charity for religious reasons, gifts and various services) often plays an essential role in the group's survival. Left to themselves, individuals are far more vulnerable.

While the fragmentation of the old social structures is a fact, overall, in cities, the extent of it varies from place to place. Solidarity may sometimes be considerable, and new forms may even be developed. This aspect should not be overlooked when approaching food and diet-related problems in a community-based optic rather than focussing only on individuals as has been the case until now.

In the preparatory phase of the programme, it is quite relevant for you to investigate some broad questions pertaining to the nature of the city's social fabric. This does not involve conducting a thorough sociological study, but the collection of basic information that may be helpful in formulating postulates as to the social composition of the city, and its organization. This study may concentrate on four areas. History is often revealing of the present, when-

ce the importance of learning something about the city's past. The origins of its present-day population may be a significant factor in social cohesion or dissension. The rapid increase in population, due to a large extent to immigration, may well create conflicts and splits. Modern political and administrative structures play a non-negligeable role in the life of a city.

How are managerial decisions made? Forms of collective organization similar to the old, traditional ones may subsist. They may represent a major element in urban social organization.

HISTORY

Several studies have been made of the history of this particular city. Furthermore, a number of local scholars (former civil servants, in particular) are fascinated by this subject. It is therefore quite easy to learn general facts by doing some reading, and through conversations.

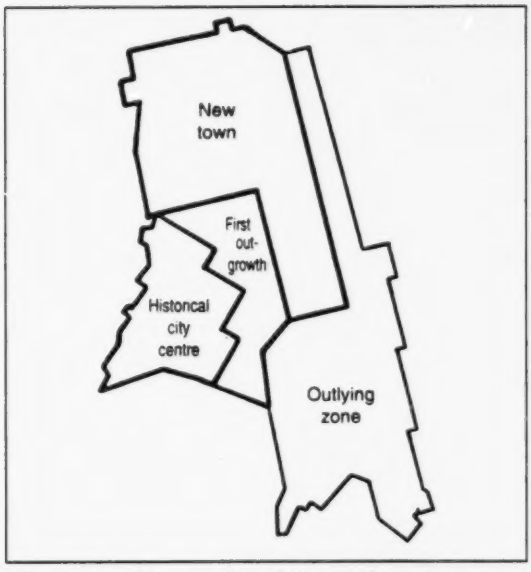

Figure 14 : Geography of the city's growth

One salient feature in the history of the city : its origins date back far beyond the colonization period, and are deeply rooted in the agitated political and military history of this part of the continent. It is the heir to a pre-colonial urban tradition, and differs in this respect from those "mushrooming" cities that are cropping up everywhere in Africa. This past is definitely engraved in the present geography, in the form of concentric circles of growth around the historical centre. The latter is still essentially inhabited by the descendants of the city's founding families, which have a strong sense of their identity. Immigrants are rejected from this inner circle : they are particularly numerous and recently arrived in the northern part of the city, more recently built-up (cf. figure 14).

ORIGINS OF THE POPULATION

No recent figures are available on the subject. A specific investigation would be required to obtain accurate information on the subject, and this would be out of proportion with your objectives and resources. Indicative information may be obtained, however, from the municipal personnel in charge of updating the tax-collection files. The city is divided into several sectors, and each agent has been in charge of one of these for a number of years and is quite familiar with changes in its population. An in-depth talk with them will bring out some conclusions, very general in nature but sufficient at this point.

The population of this particular city is ethnically extremely homogeneous. The vast majority belongs to the sedentary farming group which has occupied the region since ancient times, and which founded the pre-colonial city. The immigrants apparently come from the surrounding countryside. Some are from nearby vil-

lages with historical ties to the city, whereas others come from more distant parts of the district (this information coincides with the findings of a partial study of a neighbourhood populated by immigrants, done 6 years previously). There is a small minority of outsiders, concentrated in the outlying straw hut neighbourhood. These are nomad herders driven to the city by the droughts of recent years (cf. figure 14). The other minorities are composed of people from other parts of the country and even of some foreigners ; they are scattered throughout the city, except for the historical centre.

MODERN POLITICAL AND ADMINISTRATIVE STRUCTURES

Some talks with local officials and the examination of some organization charts at the town hall quickly bring out the main lines of these, which may be summarized as follows.

The city is run by a team of civil servants, appointed by the government. There is a local council, composed of the city's prominent citizens, but it too is appointed by the top officials and has only a consultative role. There is no electoral procedure by which the population may exert any democratic control on city management and the relationship between the administration and its constituency is exclusively authoritarian. This authority is in the hands of a number of specialized departments, which have the power to punish. Health as a whole is outside the realm of city government, with the exception of control of the evacuation of waste and mosquito eradication by the sanitation department. The district bureau, which in turn depends on the ministry of health, is in charge of health matters. This bureau is somewhat independent, although it is subject to the authority of the local prefect. It is in the framework of this district bureau that you are setting up your programme

More generally speaking, political life is dominated by a single party, which has been controlled by a handful of local notabilities for a long time. Those forms of popular expression that existed immediately after the country became independent have now disappeared. The party is still sufficiently powerful to be able to block any initiative ; nothing can be done without its consent, but on the whole it is not a dynamic factor on which to lean. Some strong personalities have come to the forefront, nonetheless, and in particular, some women have gained influential positions which would have been closed to them in the traditional context.

TRADITIONAL STRUCTURES

Several anthropological research projects have described the traditional social organization of the dominant group in this region, and some of these dealt more specifically with this city. This research, which is not very recent, has been up-dated by talks with local scholars.

The local tradition is one of strong centralization. Before the colonial period, the city was the capital of a state that controlled the entire region. This local power structure was maintained, in a weakened form, by the colonizers, and subsequently by the national

government following its independence. The palace of the chief stands proudly in the heart of the historical inner city. Now very old, this man still retains considerable prestige and is very influential with the population.

The city is divided into several neighbourhoods, each of which is governed by a prominent person directly responsible to the chief. These neighbourhood chiefs have administrative functions, but they are respected representatives of the traditional power system, and effective arbitrators as well. This is true essentially in the neighbourhoods belonging to the historical city centre. The descendants of the founding families still live in close proximity, and mutual aid apparently remains the norm. Islam is very influential in the city, and constitutes a shared value system. Small mosques may be seen throughout the city, in the oldest and most recent neighbourhoods, and seem to be a focus for social life. There are instances of cloistered women, who are only rarely allowed to leave their house.

ECONOMICS

Economic constraints weigh heavily on the everyday life of city-dwellers. Many left their village, where survival had become next to impossible, in the hopes of finding the means of eating and supporting their family in the city. The question is : to what extent can the urban economy, taken as a whole, live up to their expectations? What resources can it offer them, in terms of income and in terms of food supply?

It is important to answer these questions, even if in very general terms, since this will give you an idea of the overall constraints faced by individuals with respect to food and diet. Much information is available on the local economy, but it is scattered among a number of documents (preparatory papers for the five-year plan, articles on economics, a book on the economic geography of the city) and you feel that an overview is beyond your competency and would require more work than you and your team can devote to it. You request and obtain the services of a student of economics (for example) to whom you offer an internship in exchange for his writing a simple synopsis of available information on the structure of the labour market, as well as the supply of and market for staple subsistence foods.

THE STRUCTURE OF THE LABOUR MARKET

There is practically no industrial activity in this city. The only working facility is a brewery, which also produces soft drinks. There is a small modern crafts sector (food processing, furniture, small farming tools, electrical and mechanical repairs, construction work), but it is too limited and uncertain to support the job market. The government, in earlier times, was the only one to do some recruiting. Many people have been laid off in recent years, following the economic adjustment measures taken by the government as a result of over-indebtment.

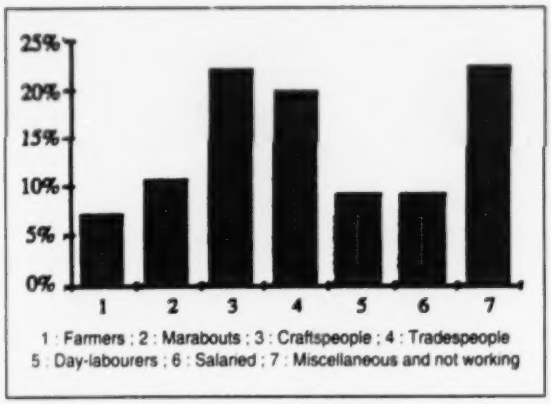

Figure 15 : Structure of employment.

The only source of economic vitality is cross-border trade with a large neighbouring country. These activities, often more or less illicit, are controlled by a very few rich merchants. The fall-out is considerable, however, because there are many middlemen, and also through the numerous offshoots of this activity throughout the city, such as tiny distribution and service businesses. The geographic economics study yields information on the work done by city residents (cf. figure 15). The vast majority lives from hand to mouth, thanks to the "informal" sector, while admitted or disguised unemployment is rampant.

FOOD CONSUMPTION

No thorough study of the structures of food consumption is available. There is a preliminary survey conducted by the district planning department, however, showing the existence of a trend toward diversification, as in most African cities. Local cereals (millet and sorghum) seem no longer to be the almost exclusive staple, as is still the case in the countryside. They are often replaced by rice, as well as by maize. Wheat, in the form of bread and noodles, is also more widely eaten. Manioc flour is a replacement in times of dearth (cf. figure 16). An extremely detailed study of these questions is under way in the capital. Its preliminary conclusions are similar. In the absence of concrete data on your city, you will therefore transpose the apparently plausible proportions found in this study.

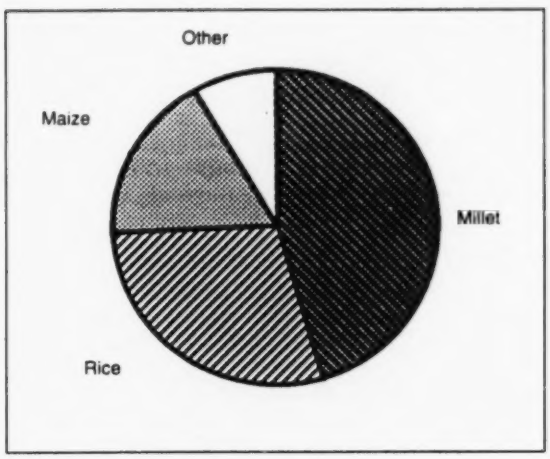

Figure 16 : Grain consumption.

The statistics furnished by the planning department for meat consumption, based on the output of the municipal slaughterhouse show an average of 50 g per day and per person. This figure is high in comparison with a study done in the capital (30 g).

SOURCES OF FOOD AND PRICES

The statistics issued by the agricultural department show that only millet and sorghum are grown locally in large quantities, while local rice, maize and wheat crops are insignificant. These must be imported, then. Furthermore, estimations by the planning department indicate that while a number of city residents maintain some farming activity, their millet and sorghum production only partially covers the city's needs (probably by far less than half). The population is therefore dependent on the market for most of its food supply. The market is controlled by a few large merchants who have no scruples about speculating during periods of dearth, so frequent in recent years.

The evolution of prices for staple foods (millet, maize and rice) depends on fluctuations which are definitely accentuated by speculation. The chart shown in figure 17 was drawn up for the 18 months prior to your study : the price of millet may be multiplied by as much as 5, depending on the season and the year. Prices of imported goods are less variable, and their relation with the price of millet may change considerably, to their advantage.

CONCLUSION

What do these findings show, then, about the broad orientation of the programme to come? Conclusions should not be drawn by reviewing findings on each point, but rather, by attempting to decipher lessons for the future action. Questions may be raised on the following points, for instance :

- the future trend in city residents' access to food, and in the urban environment (with its foreseeable effects on health) ;

- present health coverage, the economic and social features of the population and the possible conclusions in terms of strategies for action ;

- the immediate use to which the findings collected in this initial phase may be put ;

- pursuit of the effort to understand problems : objectives, working postulates.

Many conclusions may clearly be drawn from the sum of data collected for the city. Some points are particularly significant, in our opinion, although they by no means exhaust the uses to which this information may be put, and other types of remarks may be made as well.

In the light of the available facts, it seems reasonable to assert that in the coming years the satisfaction of basic food needs will become a major problem in this particular city. Indeed, population growth is exponential and there is a terrible dependency on a highly speculative market, with periodically soaring prices.

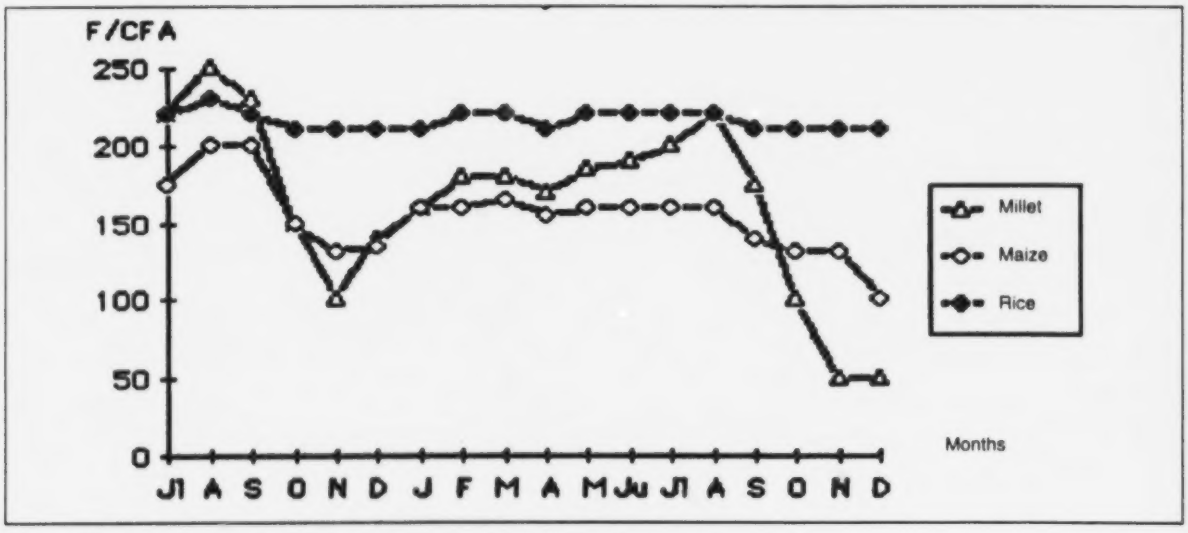

Figure 17 : Monthly fluctuations in average price of staple cereals.

Concomitantly, the city's economy will stagnate : there is no industry in perspective, economic austerity measures are cutting down on government employment and trade relations with the neighbouring countries are in a difficult pass. The programme to be set up obviously cannot solve all of these problems, but it must take into consideration the economic constraints that will weigh on the people with whom you are dealing, and who will be constantly obliged to adjust their diet to what the market has to offer, and to its prices.

The urban environment is well managed, on the whole. The city government, with outside help and support, has effectively responded, so far, to some of the major problems specific to rapidly growing cities, such as the distribution of drinking water and waste disposal. Some insufficiencies are now being evidenced, and there are reasons to fear that they will worsen as the population continues to grow rapidly and public investments are curtailed. If this is the case, some pathologies connected with environmental sanitation (such as diarrhoea) may occur and affect nutritional status.

In quantitative terms, health coverage is relatively satisfactory. Rates of attendance indicate that the population makes considerable use of them (although recourse to traditional medicine is still common). MCH centres will represent a basic supportive infrastructure for you. There remains the question of the staff's ability (in terms of training and motivation) to change its practices, and the constraints with which it is faced.

The city seems to be split by major economic inequalities : in several neighbourhoods residents show visible signs of affluence, while others clearly live in dire misery. Your action should not be a standard, all-purpose one aimed indistinctly at the entire urban population. The needs and constraints of the different categories of residents will command its differentiation.

The city is ethnically, culturally and religiously homogeneous. Family and neighbourhood solidarities seem to have survived in the oldest areas, and some traditional forms of social control and authority still operate. This is a positive element for a community approach to food problems. Conversely, in those neighbourhoods peopled mostly by migrants, the intermingling of population groups probably induces greater individualization in social relations. Modern forms of collective organization, such as political groups or cooperatives, do not seem to be capable of replacing the old system, however. One group is apparently particularly marginal : that is, the people who fled the drought and are living in the straw hut hamlets on the outskirts of the city. These preliminary diagnostic indications indicate the probable need for different strategies in approaching neighbourhood action.

While the information collected at this first level is insufficient for the designing of a programme for action, it does indicate several orientations. More detailed knowledge of the setting is needed before a concrete intervention may be started, but you are already in a position to sensitize those officials with local technical and administrative responsibilities with whom you will collaborate to

your concerns and orientations. You may also begin to train the workers who will later be in charge of the programme, and gradually bring them to transcend the very individualistic approach in which they have been trained so far. This cannot take the form of a clear break. Having them participate in the initial effort to understand the situation and in reflection on the findings may turn out to be extremely educational. It will facilitate their future participation in data-collection and will make them feel that they have contributed to the definition of a new approach.

The results of the first phase point to one broad conclusion : there are considerable material, economic and social differences within the urban population, and the overall constraints characterizing this city therefore do not weigh equally on all of its resident. If this is the case, the object of more thorough analysis and of the transition to a finer observation should not be the identification of a model situation, supposedly valid for all. It will be important to determine what all city-dwellers have in common, but it will be equally so to consider the very definite differences in social and economic living conditions existing between households.

Your strategy should therefore be inspired by a twofold concern: the identification of the shared aspects, which will form the hard core of your intervention, and the recognition of differences, which will lead you to modulate your action.

Since your resources are limited and you are intent on respecting your operational objectives, this strategy must necessarily be implemented gradually, by successive approximations.

It may be predicated on the following working postulate : the nutritional status of infants is linked with the home environment in which they live, and more specifically with the way in which the food and nutrition problem is dealt with.

Although this postulate seems to be simple common sense, it remains for you to determine what, within the child's home environment, is a discriminating factor with respect to nutrition. The documents collected during the bibliographic phase do not yield any response to this question.

A change of scale of analysis seems necessary then, with a scrutiny of households involving the launching of a survey aimed at evaluating the link between variations in children's nutritional status and differences in their home environment.

DIFFERING SITUATIONS WITHIN THE URBAN POPULATION

Levels \ Axes	Demography, health	Living conditions	Social life	Economy
City				
Household	X	X	X	X
Child				

Here again, there is no use in attempting to fill in the grid at all costs, but rather, a selective approach should be used. Some simple, easily observable criteria for a cross-sectional survey should serve as a first step in reflection on differences between households.

It is preferable, then, to emphasize the living conditions and economics axes on the grid. The results will then be used to guide you toward the analysis of social aspects, using finer, more descriptive methods (1).

Two types of criteria are used for the overall description of the living conditions of households. First, geographic location. The study of the city as a whole showed major variations between different parts of the city, with respect to housing as well as to infrastructure (piped water) and the social origins of its inhabitants (natives of the city/migrants). Next, the standard of living is also a good criterion. In an economic context in which wage-earning is the exception, and most people subsist on fluctuating, unreliable activities, studies of income are extremely delicate. The estimation of standard of living is therefore based on the observation of a number of external manifestations.

These criteria will be applied to families, defined as the totality of individuals sharing a same home, eating together and representing a tax-paying unit for local taxes. A rapid preview survey (examination of the administrative census records) indicates that several families may share a same compound. The unit used for selecting the sample (based on these same records) will therefore be the urban compound. All of the families living within the compound and having at least one child under age 4 (before his/her fourth birthday) will be included.

The survey was done at home, on appointment, and assessment of the children's nutritional status was based on the conventional indicators : weight, height and age. Attendance of health units was attested by the parents' possession of a health booklet for the child, delivered by the MCH centre, and by whether immunization against measles is noted on it. 250 compounds were randomly selected for the entire city. 50 others from outlying straw hut hamlets that are not listed on the census records were selected in the field, using the transect method (all of the compounds intersected by imaginary right lines crossing the hamlet at its greatest length and width). 380 of the households residing in these compounds corresponded to the selection criteria, representing a population of 524 children between birth and age 4.

---

(1) Two students of public health from the medical school are called on to do this survey.

The survey was conducted over a 6-week period by two students of public health, assisted by a nurse from the MCH centre covering the geographic area corresponding to the location of each compound. Data were entered regularly on a personal computer and analysed using a standard statistical programme. The first findings were available two months after the survey was launched. In view of the results, and of the objectives defined, the following points will be retained.

OVERALL SITUATION

Let us make a rapid sketch of the health status of infants, before exploring differences in detail. To do so, let us use some conventional indicators.

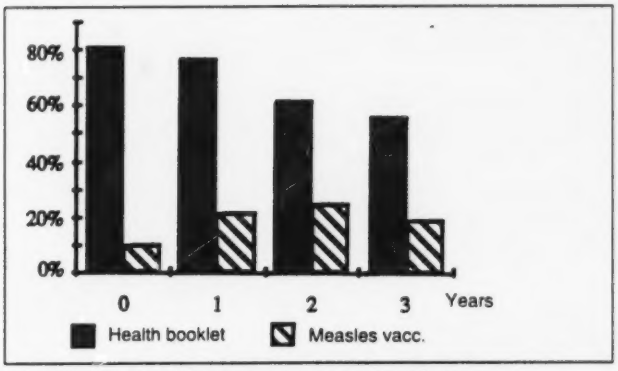

Figure 18 : Health coverage : age breakdown.

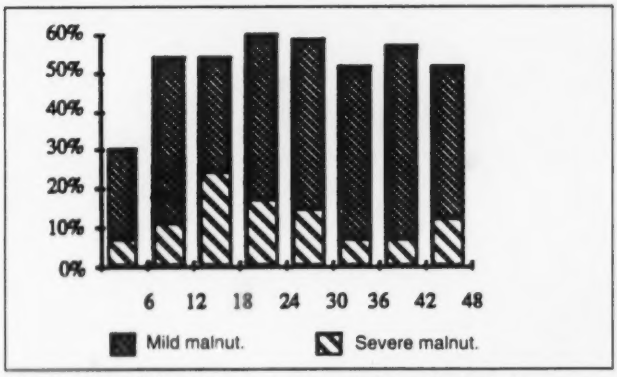

Figure 19 : Malnutrition : age breakdown (months).

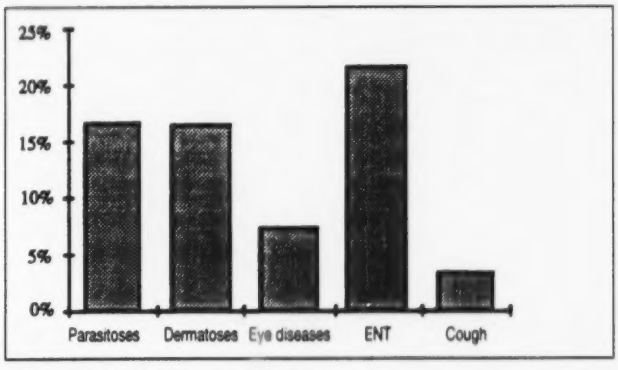

Figure 20 : Other conditions.

These vary considerably with age (cf. figure 18). While the health booklets show coverage to be relatively high during the first two years, it declines sharply thereafter. On the whole, figures for immunization against measles are low. It is practically non-existent during the first year, then rises very moderately during the following years. The rate of coverage is higher for the other vaccines, but is less indicative of attendance of MCH centres since these are performed either at birth or during mass campaigns.

Malnutrition follows the usual pattern of change with age (cf. figure 19). The most serious forms show a peak toward 12-18 months, and at that point they affected nearly one fourth of children surveyed. Milder, more benign forms are less age-sensitive. Between 6 and 48 months, less than half of children had a satisfactory nutritional status. The high prevalence of malnutrition within the project's target population is thus corroborated by these findings.

The prevalence of other conditions is also indicative of a health situation much the same as what is seen elsewhere in Africa, in similar contexts. The following conditions were recorded : intestinal parasitoses, conjunctivitis and trachoma, ringworm and impetigo, rhinitis, otitis, bronchitis, and a cough lasting more than 2 weeks (cf. figure 20).

Furthermore, a specific survey of all of the city's schoolchildren showed a 20 % overall incidence of diarrhoea.

GEOGRAPHIC DISPARITIES

The data collected during the first phase were used to divide the urban area into several broad zones corresponding to marked material and social disparities. The following spaces were defined (cf. figure 21) :

1 : the historical inner city, characterized by a majority of traditional constructions, very densely populated and socially very homogeneous ;

2 : the ring corresponding to the first outgrowth, where modern types of housing prevail, density is still very high but the population includes many immigrants ;

3 : the new neighbourhoods, where housing is heterogeneous, inadequately served by the piped water system and not very dense, and which is populated essentially by migrants ;

4 : the affluent neighbourhood which cumulates the positive features for housing and environment, and is inhabited by the local lower middle class ;

5 : the outlying straw hut hamlets, where living conditions are wretched and unhealthy.

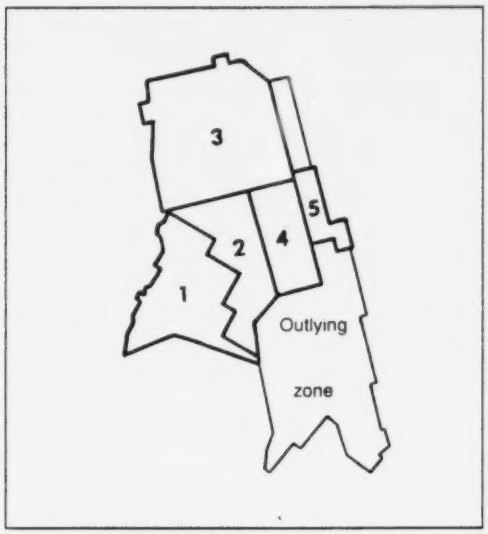

Figure 21 : Geographic zoning.

Each of these zones, inhabited by a specific type of population, represents a distinct setting, in many respects. The question is, how do these spatial and social splits translate in terms of health? Can a health-related geography of the city be mapped out, to be used by the intervention programme for modulating purposes?

Another look at these same indicators of attendance shows moderate but clear-cut inter-zone variability (it is statistically significant (cf. figure 22).

The totally underprivileged situation of the refugee population (zone 5) is clearly seen : none of the children surveyed had a health booklet and none had been vaccinated against measles.

In the affluent neighbourhood (zone 4), on the other hand, the situation is much better than in the rest of the city, although not entirely satisfactory (especially with respect to the measles immunization rate, which is low).

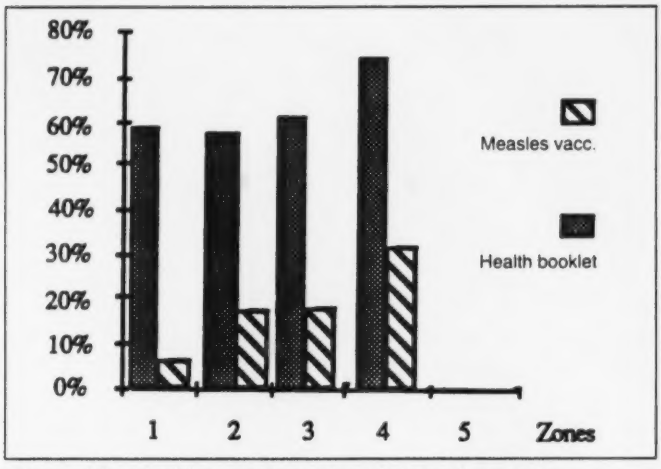

Figure 22 : Health coverage : breakdown by zones.

In the historical inner city, while the health booklet is just as present as in the other popular neighbourhoods, vaccinal coverage is definitely deficient.

The differences observed partially corroborate the hypotheses formulated as to the most salient economic inequalities. However, the status of long-standing city resident - in this case, the inhabitants of the historical neighbourhood - does not seem to confer any privilege

with respect to attendance of health units. We might have supposed that these people would be more familiar with the services offered than the recent migrants living in zones 2 and 3. Some variability is seen, but no explanation is available for the moment.

Malnutrition

Interpretation of these findings is further complicated if inter-zone variations in nutritional status are considered. The latter is far from confirming the hierarchy that might have been presupposed by looking at zoning criteria. While the situation of the refugee population is extremely unsatisfactory (zone 5), the privileged position of the affluent neighbourhood (zone 4) is in no way corroborated, quite to the contrary. The best results are seen in the first ring of outgrowth (zone 2), whereas the children of the oldest city-dwellers (zone 1) are again not advantaged by their parents' long familiarity with the urban world (cf. figure 23).

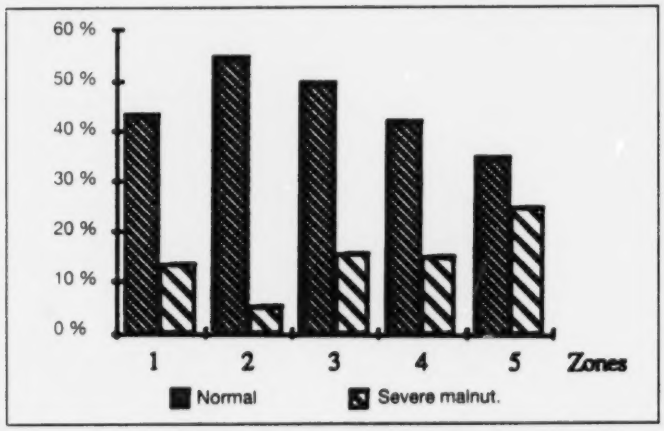

Figure 23 : Nutritional status : breakdown by zones.

At this first stage of analysis, the link between children's setting and their nutritional status does not seem to be as simple and direct as was postulated by the original hypothesis. Children from the richer neighbourhood scarcely seem to benefit, dietarily speaking, from the apparent advantages accrued by these inhabitants.

A similar conclusion is reached for the other conditions (parasitoses, dermatoses, ENT ailments, cough). The varying social and material living conditions encountered in children from different settings do not seem to have a clear-cut impact on their health status. This finding leads us to wonder what other factors, not connected with the zone in which they live, contribute to variation. One serious hypothesis seems to point to the quality of the clinics attended, since there are considerable differences between these. Children in zone 2 mostly attend a better equipped, better managed health centre, run by the best trained staff of the entire city. This may account for their nutritional status, which is far above average. Conversely, the MCH centre serving the oldest part of the city (zone 1) dates back to the colonial period : it is outdated and under-equipped, and is just scarcely able to perform its tasks. Last, the clinic attended by children from the northern and eastern parts of the city (zones 3 and 4), although more recent, serves too large a zone for its capacity : it is practically at the saturation point. In fact, a second centre is in the planning stage.

A specific survey would be required to obtain epidemiological confirmation of this hypothesis pertaining to the discriminant role played by health centres. It was not deemed necessary to conduct such a study, however, given the qualitative arguments available : the poor functioning of the centres incriminated is already a subject of concern for public health officials. When a health system is entirely in the hands of the state, and no private sector can com-

pensate for the gaps in the public sector, the impact of the quality of clinics is quite comprehensible.

FAMILY STANDARD OF LIVING

The exact setting in which each child lives may be better understood if the family's standard of living is clarified. This also makes possible a more thorough scrutiny of the connection between nutritional status and material (environmental and economic) constraints.

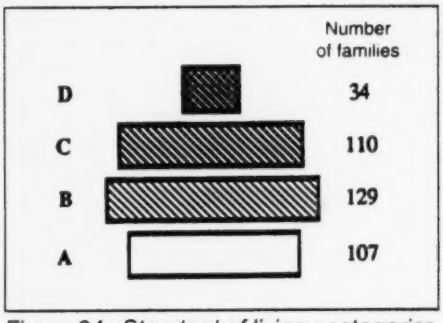

Figure 24 : Standard of living : categories

Since a budget survey is a delicate, cumbersome instrument, the evaluation of the standard of living of families was based on a combination of simple indicators of material well-being which yielded a score : housing (4 classes), means of travel (4 classes), modern household appliances (3 classes).

The population was divided into four categories, on the basis of this score (cf. figure 24) :

- households living in very precarious situations (straw huts), with no element of material comfort (A) ;

- households living in traditional mud wall buildings with no modern appliances or means of travel (B) ;

- households living in improved housing (cement rough-cast, corrugated iron roofing) or possessing either one appliance (television) or a means of transportation (motor bike) (C) ;

- households with improved or European type housing as well as one or several appliances (television, refrigerator) and means of transportation (motor bike, automobile) (D).

This determines categories of households with distinctly different living conditions. Category A contains people living in dire misery (107 households), whereas category D, at the other end of the continuum, with its 34 households, represents the developing urban lower middle class (wage-earners, merchants, craftspeople in the modern sector). The physical and economic environments in which children belonging to these categories live have nothing in common.

Indicators of attendance

Attendance of health units is seen to increase quite considerably with the improvement of standard of living. From category A to category D, coverage by health booklets more than doubles, and frequency of immunization against measles follows the same trend (cf. figure 25).

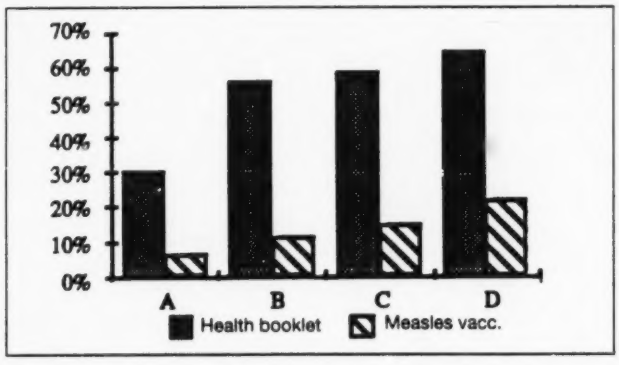

Figure 25 : Health coverage and standard of living.

Despite the fact that preventive medicine is delivered free of charge, a better standard of living seems to contribute to the improvement of children's health-related environment. The logic that prevails here, then, is the cumulative nature of privileges.

Malnutrition

Paradoxically, the trend with respect to infants' nutritional status, which might be expected to be linked with the family's financial resources, is much less clear-cut. It is a fact that there is a definite trend toward improved nutritional status in children who are higher on the scale of economic status, but the differences are too small to be viewed as statistically significant (Chi2 for frequencies, $p > 0.25$). Apparently, then, the relatively better nutritional situation seen in the sample of children from the affluent class is not proportionate to the economic and material advantages supposedly found in their family (cf. figure 26).

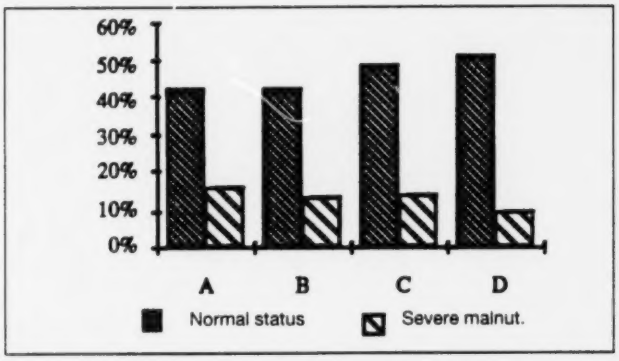

Figure 26 : Nutritional status and standard of living.

This first survey phase results in an apparently paradoxical finding : with respect to health, a number of specific situations may definitely be identified, either through a comparison between geographic zones or of through closer scrutiny of the standard of living of families. While these may be taken into consideration in conducting the project, no direct link can be evidenced between the nutritional status of infants and their economic status and living conditions.

The original hypothesis is not corroborated on this point, then. Certain parts of the population benefit from a privileged situation or suffer severe handicaps, depending on their place of residence and their socioeconomic level. but apparently the main reasons for malnutrition in small children should not be sought in their immediate material surroundings. A finding of this type cannot be generalized, since there are many situations in which poverty and wealth constitute the main dividing lines for nutrition-related vulnerability. To some extent, this does not seem to be the case in the situation analysed here. This incites us to pursue investigations further.

If we return to the original grid used for analysis, and to the diagram of the interrelation of logics, the results of this survey will be seen as indicative of the fact that in the present case, the logics of living conditions and economics (constraints weighing on families) have very little to do with the logics of physical reproduction (nutritional status of children). One field has been totally neglected in this analysis, however : it is the field of social logics.

Environmental constraints have been viewed in an isolated manner, without taking into consideration the concrete behaviour by which they are evidenced. The idea of a direct link between a family's standard of living and its children's nutritional status implicitly implies that the dietary conditions of the latter are essentially dependent on the monetary resources of the individuals in charge of feeding them. A link of this type is often documented, but it is by no means automatic. Extra income may be allotted to something quite different from food for children, and conversely, underprivileged families may have access to sources of food without having to buy it.

A better understanding of how the food problem is solved within families - that is, of the technical, social and economic strategies deployed by them, and which affect the health status of their children - requires that all facets of the situation be examined concretely.

In other words, a change of method is required : an approach based on the in-depth observation of behaviour, one which takes individual experience into consideration, must be adopted.

It is out of the question for you to undertake a long, minute anthropological study ; what you need is simple notions, which will help you understand and situate the problem and the stakes involved - with the possibility of going deeper, in step with interchanges with other participants and as the programme advances.

FOOD AND DIET-RELATED BEHAVIOUR

Levels \ Axes	Demography, health	Living conditions	Social life	Economy
City				
Household			X	
Child				

For a better understanding of concrete behaviour, methods enabling a more thorough analysis of the problems encountered at the household level and of the ways in which they are solved are required. What are the questions? How can answers be obtained?

The idea, here, is not to attempt to establish cause-and-effect relations between different variables. We are putting the epidemiological approach aside, in an attempt to stake out a complex situation, and to seek keys for understanding it.

The main objective is to describe the most frequent and general behaviour with respect to food and diet, and then - if possible - to define certain types of situations or logics which may serve as references for modulating interventions within the programme.

It is absolutely essential that this phase of analysis of the environment be put to use for training and mobilizing the personnel who will subsequently implement the programme. This is a unique opportunity to provoke thought and to challenge certain convictions which tend to be anchored in people's minds by an excessively technicist training. This personnel should be put in charge of collecting information. With the support of an anthropologist who is a native of the country and is very familiar with the field, a simple research protocol has been developed. It will provide responses to several well-defined questions, identified through collective reflection on the outcome of the previous surveys.

One central postulate guides this whole reflection process, and is based on the points uncovered so far. It may be summarized as follows. For the inhabitants of the city in which the intervention programme is to be implemented, eating is fraught with uncertainty : the dramatic fluctuations in farm production, the poor organization of the local food market and of the supply circuits, as well as the enormous variations in the price of indigenous cereals impose constraints that they experience great difficulty in surmounting. In the face of these difficulties, however, they do not remain passive, by any means. There are collective strategies of response to dearth and insecurity, and these combine resourcefulness in obtaining necessary goods, the techniques used to transform these into eatable food, and decisions as to who eats what. To a large extent, the nutritional status of children reflects the failure or success of these strategies.

WHAT ARE THE QUESTIONS?

Starting from this overall approach, it is important to identify a number of specific questions to be answered, and these too may follow the same main axes : technical logics, economic logics, social logics. These answers should also consider ways of thinking, since these constitute the stable background against which

the adaptative strategies of consumers are conceived and constructed. Here are a number of questions corresponding to this grid.

What are the basic dishes in the family diet, how are they prepared, and what technical and economic constraints condition them?

What are the sources of family food supplies, and what are the economic strategies underlying recourse to each of them?

How are responsibilities for the food supply shared within the family?

What is the social organization of food preparation within the household?

How is food shared and distributed within the family, and in some cases, outside of it?

How (roughly described) are the different types of foods viewed and classified, and what value is ascribed to them?

The personnel working in clinics, and especially the women, already have at least partial answers to most of these questions. In their professional function, however, they tend to ignore what they know and not take it into consideration in their practice.

The objective of this phase of the study is both to make them aware of how useful their previous knowledge really is, and of the need to refine it, since it is partly composed of stereotypes, especially with respect to those categories of people whose educational level is low.

WHAT METHODS SHOULD BE USED?

Several complementary methods may be applied to the collection of this type of information :

- group discussions, attended by mothers participating in demonstration sessions on the enrichment of porridges, touching on all of the above-mentioned questions ;
- personal observation, conforming to a strict protocol, particularly concentrating on cooking techniques ;
- a broad survey taking the form of individual talks with a sample of mothers attending the MCH centres, completed by some talks in the homes of those categories of women who are not covered by the prevention system (category A of the standard of living classification, marginal population living in the straw hut hamlets) ;
- follow-up, by repeated visits, of several families illustrating different types of social and economic situations.

What results may be achieved by using these methods?

FOOD AND DIET-RELATED STRATEGIES

STAPLE DISHES AND HOW THEY ARE PREPARED

The group discussions showed that local cuisine is made up of three main types of preparations, all cereal-based (containing millet or sorghum, maize or rice) : porridges and thin dough, thick dough (or boiled rice) served with a sauce, and fried dough.

The first two are part of the everyday family diet (porridges in the morning and at mid-day, thick dough in the evening), while the third is reserved for special occasions or purchased.

Home observations were made of some thirty-odd families belonging to the different socioeconomic categories. They concentrated on the reconstitution of the meals prepared at home and the food eaten

on the day the survey people visited the family. Staple foods prepared at home were not subject to much variation with standard of living. In the wealthiest families, however, the composition of the sauce was different (it contained meat and vegetables) and more rice was eaten at the mid-day meal. Porridge made of manioc flour (considered a poor people's food) was frequently eaten by the poorest families. Meat, either roasted or fried, is bought already cooked. The same is true for bread and fruit. Cooking is always done on wood-burning hearths, and finding fuel is a constant problem.

Cooking techniques

When dealing with food and diet, the cooking operations themselves are too often neglected. These are not simply a long, physically demanding series of tasks ; they constitute a technical system in its own right, with its tools, motions, and chain of operations, like any other productive process. If this aspect of life is overlooked, there is a risk that we will lose sight of a number of constraints that play a major role in the choices made by families with respect to food and diet.

Some methodical observations conducted during surveys in homes were useful in that they reconstituted and minuted the operations by which the main dishes eaten by families are prepared. For millet-based dishes, several hours are required between the moment when the woman takes possession of the raw materials and when she serves the finished product. This represents a considerable constraint for families in which cereals are purchased on a day-to-day basis, depending on the day's earnings, and often at too late an hour for undertaking such a time-consuming operation. Carrying the grain to an automated mill relieves the woman of some work, but hardly shortens the preparation time, while increasing expense.

Figure 27 illustrates the major differences between preparation times for different dishes. Rice-based dishes are clearly advantageous in that they require less time and effort. This is one reason why housewives tend to favour them.

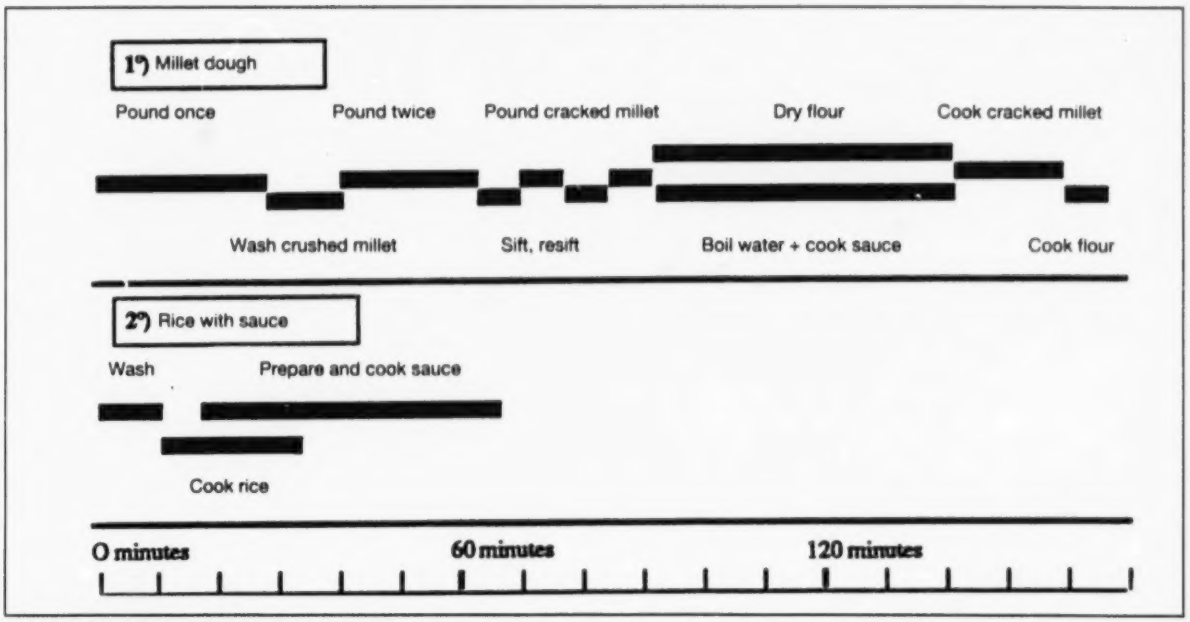

Figure 27 : Preparation and cooking.

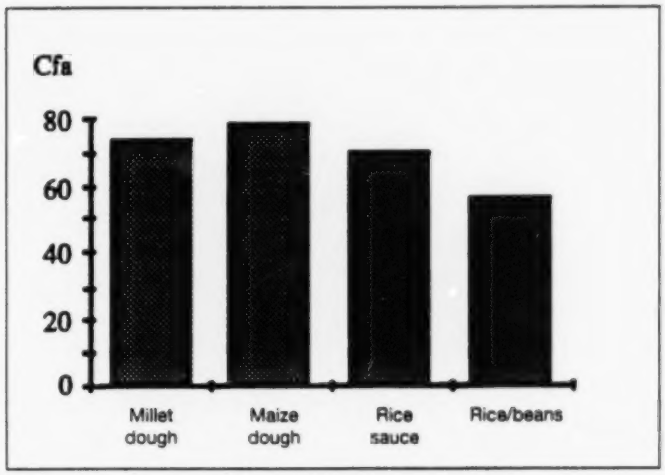

Figure 28 : Average price of individual portions.

Financially speaking, rice also has some advantages (cf. figure 28). Whereas the millet flour obtained by pounding weighs only a fraction of the originally purchased grain, no such loss is suffered in the case of rice. Furthermore, less fuel is required for cooking. Detailed studies conducted in another of the country's cities have shown that when the price difference between millet and rice is not too great, the latter becomes financially advantageous. As mentioned above, this does happen at times.

These few observations show that food preparation is subjected to a series of technical and economic constraints. It is not at all true that families rigidly reproduce stereotyped traditional practices : on the contrary, they make constant efforts to adopt appropriate responses to these changing constraints. Any proposed modification of behaviour in this field, however slight, must take care not to threaten these fragile balances, if it is to have any chance of being accepted.

SOURCES OF FOOD

Methodical talks with a sample of 200 mothers attending the MCH centre included the recall of the food eaten by these women and their children on the previous day.

As opposed to the conventional idea that most of the food consumed is produced within the family, these findings showed the tremendous variety of means of access to the food prepared. Dishes cooked at home represented less than one third of the day's food intakes, with gifts and purchased foods as the main dietary sources (cf. figure 29). A study done long ago in a rural setting had arrived at similar conclusions for men.

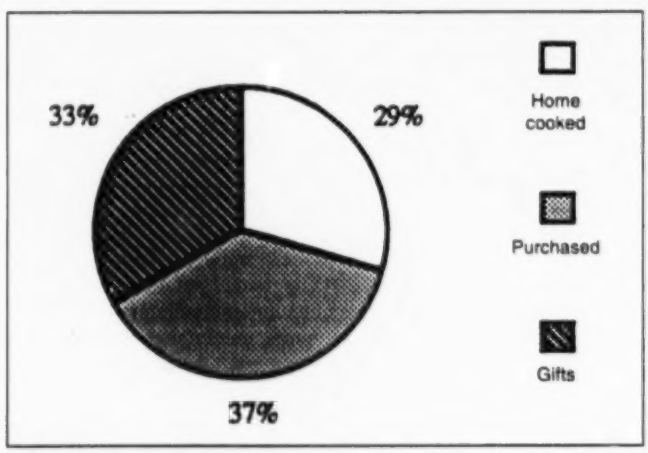

Figure 29 : Origins of food eaten.

Far from being self-enclosed, the family cell is in the centre of an extended network of circulation of food.

Gifts of food, coming from other families (from the women, as a rule), are mostly made of the same dishes (millet or maize dough, or rice) as those prepared at home.

Purchased foods, on the other hand, constitute much-valued opportunities to introduce variety. Fritters, beans, tubers, and a particular type of millet porridge are practically never cooked at home, but purchased ready-made, from

outsiders. Many mothers thus procure small quantities of food that is not a part of the usual family menu, for their children (cf. figure 30).

The ready-made dishes purchased vary from one family to another. The wealthiest tend to look to the market for exceptional items such as meat, vegetables and fruit. The poorest, on the contrary, buy their staple foods on the market. In some particularly underprivileged families, the pot almost never boils, and food is always purchased, in a haphazard manner, using the few coins gleaned here and there.

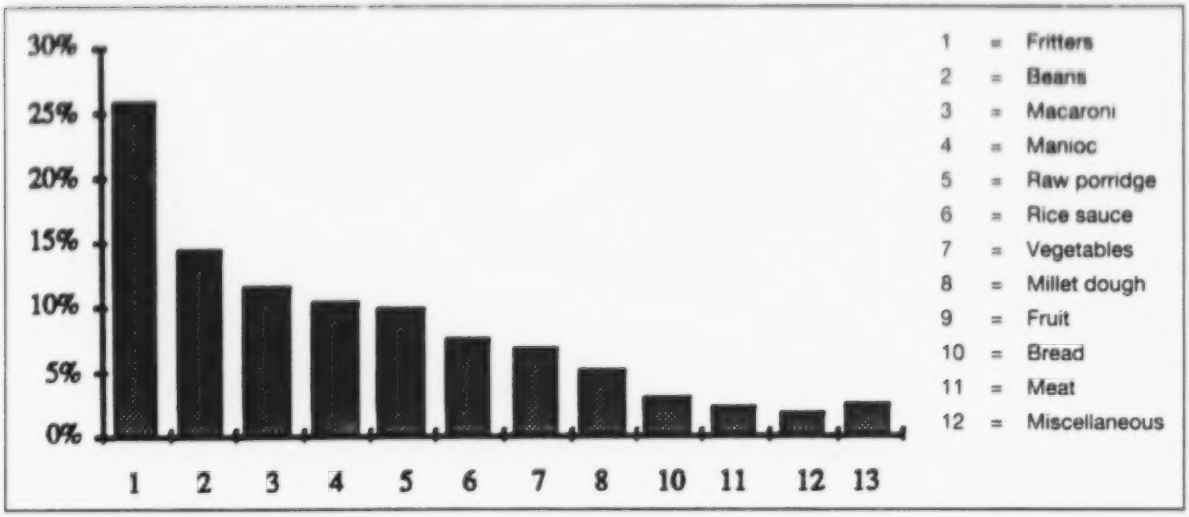

Figure 30 : Food purchased for family consumption (% of different foods).

The amount of gifts received is also a differentiating criterion : some women receive a great deal, others very little. Standard of living does not seem to be a discriminant factor here. Rich and poor may all be offered food - the difference being that in underprivileged families these may constitute a major contribution to their diet. Isolated families are encountered in both categories.

This takes us far from the simplistic model in which the nuclear family obtains its raw materials from the market but prepares and circulates food in a quasi-autarcic manner. Observations show quite the opposite : that families are very open in the way they are integrated in an extended network of exchanges of prepared foods. This network is based on the interplay of gifts and return gifts, but also on mercantile transactions. An organization of this type for access to food makes a large panoply of potential resources available to families. Obtaining food in this context involves complex, diversified strategies, in which economic and social logics are interlocking ; this is far from the reproduction of automatic, stereotyped practices. It is easy to see how simplistic the hierarchy of socioeconomic levels defined above may be in comparison with the actual framework within which this society approaches the food problem. There is no doubt that the posses-

sion of money is extremely helpful for eating and feeding one's family, but there are other ways of obtaining food, which are not directly linked with one's purchasing power. Here we enter another field, one of social relations and their ties with the sphere of food and diet.

FOOD, DIET AND SOCIAL RELATIONS

Access to staple foods (direct access, or through the market), the ability to transform them into eatable dishes, as well as the balanced distribution of food between its potential consumers, are definitely some decisive factors in a group's capacity to physically subsist. The demographic impact of the subsistence food deficits repeatedly experienced by the Sahelian countries is an ample indication of the strictness of biological constraints in this field. It is also a fact that the food and dietary situation is not at all restricted to this aspect of the question. On the contrary, food and all of the activities related to it are particularly expressive of the dynamics of social relations, so that food and diet-related practices belong to the social sphere at least as much as to the biological or physical sphere.

The organization of food preparation activities

A survey was conducted, based on repeated, weekly visits to homes during 5 weeks. At each visit, direct observation of practices and thorough talks were able to shed more light on the social organization of food preparation activities. Group discussions (cf. Methods) showed that shared responsibilities and the organization of work may depend not only on the financial situation of the household, but also on the complexity of its structure (polygamy/monogamy, cohabitation with other families or not). Some thirty cases were selected so as to cover the entire range of the most frequently encountered situations. Some broad observations were made in this way, and some indications obtained on the factors possibly contributing to the diversity of situations.

The social pattern governing the supplying of staple foods entering into the family's dishes is consistently the same : this is the men's responsibility (except when they are absent, as is the case for migrants or for households run by a single woman). They purchase the cereals and give their wives a small daily sum of money with which they may purchase relishes and prepared food for their children. This pattern is not always respected, and many women are obliged to manage on their own. Their margin of freedom is usually limited by the authority of a man, however (normally, a wife must obtain her husband's authorization to leave the house, and she is not allowed to go to the market).

The organization of work in the kitchen is closely dependent on the family's social and demographic structure. Inter-family differences in this respect may be considerable. In the first analysis, the average size of families in the sample of 250 compounds was from 5 to 6 individuals, with enormous variations. Polygamy was frequent (1/4 of married men had more than one wife) and the extended family structure still prevailed in some neighbourhoods, particularly in the historical city centre. This means that some compounds housed several dozen individuals, including related families (several brothers and their wives, for instance) who continued to live

together and to perform the household tasks in common. But also, the population of other compounds was often reduced to one monogamous nuclear family.

In the case of the simplest socio-demographic structures, all of the tasks connected with food preparation rest on the wife. The situation becomes increasingly complex, however, when the social structure is more open, and a variety of cases may be seen.

Figure 31 illustrates two of the instances encountered. The kinship structure of these two complex households is shown. The unshaded spheres or ovals represent the sub-units in which porridge, the staple dish for morning and mid-day meals, is prepared and eaten. It clearly shows that each sub-unit is centred around one wife, who prepares this dish alone, for her children and herself. When the husband is monogamous, he too is always one of the consumers. When he has several wives, on the other hand, he eats the porridge prepared by the wife with whom he will pass the coming night (he is usually obliged to respect a regular cycle, and to spend two nights with each of his wives).

The preparation of the evening meal, on the other hand (shaded rectangles) is collectively organized. In the first example, where the older generation is monogamous, its authority has a federating effect on the entire group of women : the mother-in-law does not participate physically in cooking operations, but she organizes her daughter-in-laws' work. The dough and sauce are made alternately by the second wives of each brother, while the first wives help them, but avoid the hardest jobs. The third and very recent wife of the youngest brother learns her new role, supervised by the two senior wives. In this family, meals are taken in common by groups with the same status, age and sex.

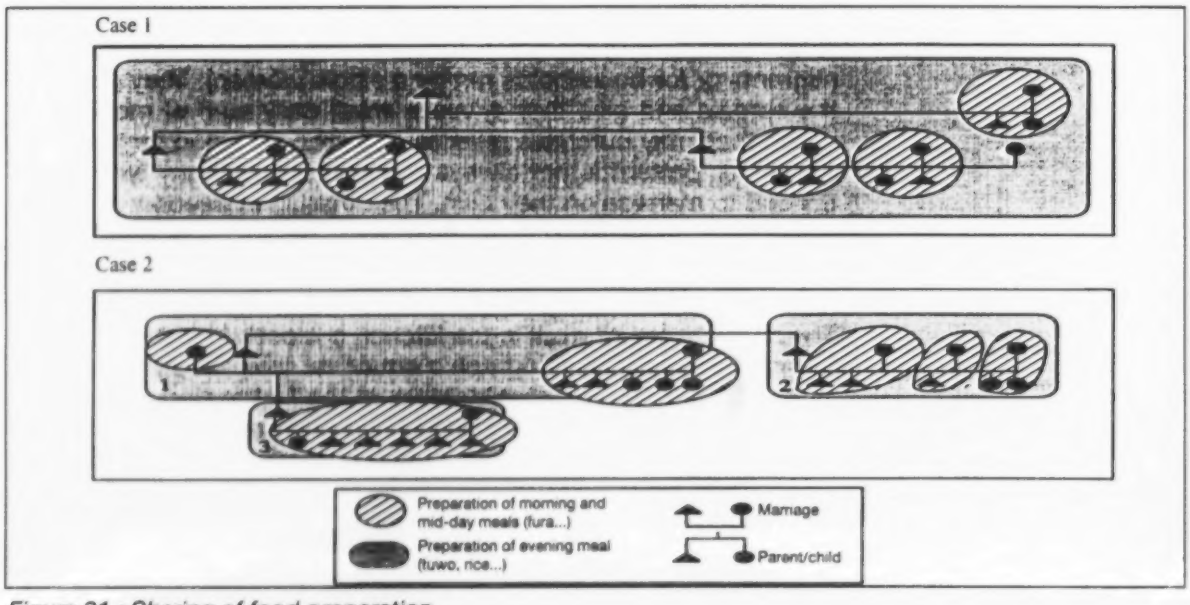

Figure 31 : Sharing of food preparation.

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In the second example there are also two generations of family heads, but with a degree of rivalry between the two wives of the older generation, with no female authority in a position to arbitrate between them. Food preparation is organized in the form of alternating work at tasks, with families taking turns at responsibility for preparing the evening meal, but eating their share separately.

These examples indicate that food preparation is a community task, to a large extent, and one in which all of the women in an extended family are involved in differing ways and to differing degrees, depending on the case. This is truer for the consistent evening meal than for the porridge eaten in the morning and at mid-day. It is nonetheless true that in extended households composed of several women, each cook has only a limited autonomy in decision-making and action, and is more or less closely subordinated to the collective pressure of the group to which she belongs. Any attempt to take her distance with respect to this pressure, or to counter it, would most probably end in conflict.

Circulation of cooked food

The observations and talks during visits to homes were useful in delving deeper into the importance of gifts as a source of food supply, and in uncovering the social logic to which this behaviour corresponds.

Earlier anthropological studies have shown that in the cultural context prevailing in this city, women's social life is essentially bound up with their participation in gift-giving networks : a multitude of festivities and ceremonies provide opportunities for contests during which money or gifts in kind are exchanged, and the person who has proved most generous accrues the greatest prestige.

The survey of families showed that gifts of food - coming from the family kitchen - may serve as pretexts for similar social interplay. Competition and ostentation are usually absent here, but these gifts do play a most important role in social integration : many women, however rich their family, participate in institutionalized exchange networks to further their integration in the neighbourhood, or to maintain the old fabric of solidarity that tied them to the people around them. This survey pointed to one important aspect of this social practice, which is the security it affords to the women who participate in it. In times of penury, these gifts may secure a minimum of food for the woman and her children. Participation in a network which includes some affluent individuals is a security strategy resorted to by many women with limited financial resources.

Women's strategies play a key role in the functioning of this food exchange system. By cultivating their personal social networks (based on kinship or neighbourhood), but also by selling cooked dishes, women may recover some of the autonomy of which marriage deprives them.

A better understanding of how this operates may be achieved by examining some detailed case studies which provide more concrete illustrations of women's strategies.

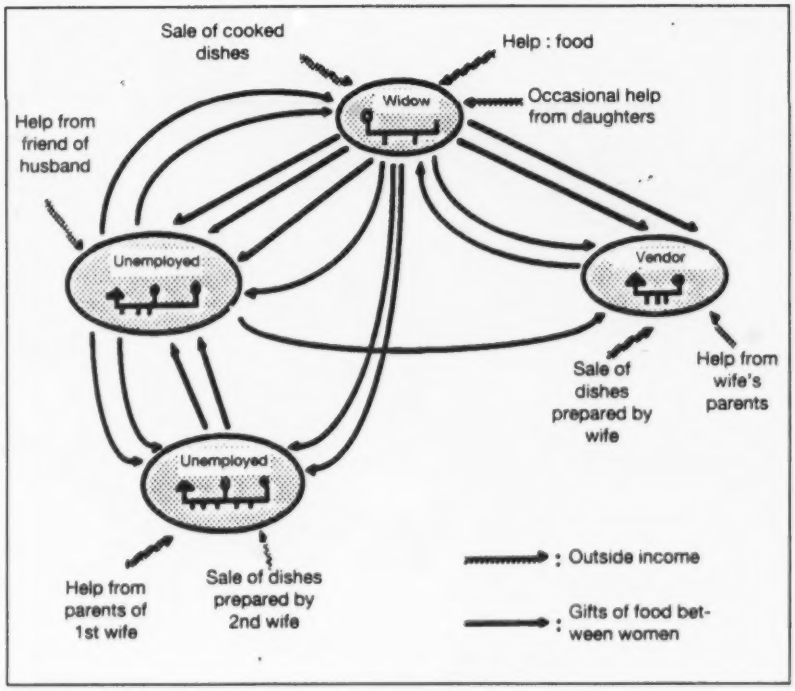

Figure 32 : Food exchanges between neighbours.

The network shown in figure 32 was reconstructed by noting, on five different visits at one-week intervals, the food eaten on the previous day by four families residing within a same rented compound. Each arrow materializes a gift of food sent by one woman to one of the neighbouring women. The actual exchanges are of course much denser than those shown here, since they take place daily.

The same survey also collected information on the outside sources of food supply or of income available to these women.

This network of neighbours functions as a well-knit community, fed by the initiatives and personal relations of each of the participant women in turn ; it is this system, to a large extent, which enables all of the women to deal with penury. The widow plays a central role in providing food within this network, since she has managed to obtain access to food distributed by an aid organization, a privileged situation indeed. Each participant nonetheless takes her part in these exchanges, to the best of her ability. In this respect, membership in wider sociability circles is decisive : help from parents, children or friends, however occasional, constitutes a most valuable contribution which supports the entire system. The most common source of income for these women is a small trade in cooked dishes, however. All do this, even when real sacrifices are required to do so : the wife of one unemployed man, for instance, was obliged to sell the enamelled plates that constituted her dowery to obtain the initial capital needed, whereas the wife of the vendor sold a piece of furniture she had purchased earlier thanks to the gifts received when her last child was baptized, for the same reason.

An example of this type is a concrete illustration of how non-monetary exchanges among impoverished families may represent a form of sharing of resources and of collective management of penury. It is the way social relations are handled which is in the forefront of strategies aimed at achieving security, here. This example shows the solidarity existing between families with similar economic statuses, but the aim of every woman with meager resources is to succeed her integration in a network headed by someone rich, so as to benefit from her generosity. Actually, it is social isolation which represents true impoverishment.

SOCIAL REPRESENTATIONS OF FOOD

There are reasons to believe that the ability of a family - and especially of the woman or women within it - to develop social strategies for access to food is at least as decisive for its children's nutritional status as its intrinsic financial situation. This partly accounts for the slight differences in this respect between wealthy families and the poorest families.

One finding, based on the initial grid and the questions raised during the phase of detailed analysis, summarizes these points : food and diet-related practices are the manifestation of complex, dynamic strategies composed of a combination of economic and social logics which cannot be understood by an analysis which confines itself to the level of individual behaviour only, but which must be situated within the community framework which lends meaning to them.

The place occupied by gifts in the economy of African countries is often depicted as a reflection of a "mentality" fostering "waste" and "parasitism", and as an obstacle to the modification of behaviour. The reality may in fact be quite different : these are perhaps the expression of a rationale according to which the long-term perpetuation of community ties, and a form of redistribution which helps to prevent accidents, are most important. When the observation of actual practices is attentive to the real dimensions of the actors' experience, it may detect these underlying logics.

However essential it may be to identify the economic and social foundations of dietary behaviour, it is important to avoid the pitfall of a simplistic utilitarism, according to which patterns of consumption are solely the bottom line of a scrupulous accounting of material advantages and social benefits. While families may show great flexibility in their behaviour with respect to food, they still view food and the act of eating in terms inherited from a culture with which they constantly attempt to reconcile their present-day practices.

The research programme required for the elucidation of this theme is far too ambitious for the capacities and needs of the present study. Some simplified indications have been uncovered, so as to facilitate subsequent exchanges with mothers. The research conducted previously by the anthropologist who was called in as adviser facilitated the study by providing some broad notions on indigenous conceptions of the world and of the body, which were used to guide talks and to interpret their contents.

	Dry	Moist
Hot	- Burning heat - Energy, liveliness - Male sexuality - Eating - Solid, spicy, fatty food	- Moist heat (balance)
Cold	Dry, biting cold (wind, aggression)	- Cool moisture - Sluggishness, slowness - Female sexuality - Drinking - Liquid, acid food

Figure 33 : Cultural food-related imagery.

Figure 33 roughly summarizes several overall classificatory rules that prevail in the indigenous culture, and which apply to food.

They distinguish two pairs of poles - hot and cold, dry and wet - on the basis of which numerous everyday experiences are classified.

The lesson to be drawn here is that health is perceived as the outcome of the proper balance between these opposite, complementary

principles. Diet is an essential means of regulating this balance : it must take special care to dose "cold" and "hot" elements, solids and fluids, spices and sweets, fat and lean food.

Despite the changes that have affected the local diet, through the penetration of new foods, for instance, these general rules continue to be applied to dietary behaviour. The ongoing application of the opposition between liquid food (porridges) and solid food (dough, rice with sauce) for instance, is an indication of this balancing out of the daily food intake.

Eating is not only a symbolic affair, of course : it is also a source of pleasure, and people are intent on satisfying their tastes. This too is important in understanding the lines along which a cuisine is structured.

Some of the basic qualities that are appreciated in food may be determined through talks at the clinic and surveys in homes. The first requirement is that food should afford a feeling of fullness. For this to be the case, a dish must be easy to swallow, the millet dough should not be too dry or too compact, and the sauce should be just thick enough to help each mouthful slide easily down the oesophagus : this explains why one ingredient is always a plant that makes it somewhat sticky. Porridges are particularly appropriate ways of achieving this physical impression of complete satiation of hunger, which is characteristic of true food. Fritters, roasted meat, bread, fruit and vegetables may be "remedies for hunger", but they tend to be "extras" rather than real food, in the full sense of the term.

Some tastes, such as saltiness, are especially appreciated. A good cook is one who knows exactly how much salt to add to her sauce. Spicy flavours are also enjoyed : these include the hotness of tiny pimentos, but also the subtle taste of ginger, pepper and the many other spices found on the market. These strong tastes are linked with the idea of heat : they provide strength (for this reason, newly delivered women are served a spicy porridge during the post-confinement period) and stimulate male sexual vigour.

Acidity is also a desirable taste : in porridges, it is procured by the sourness of curdled milk, or by macerated tamarind pods. Certain receipts achieve this acid taste in millet or maize dough by allowing the flour to sour slightly. This tends to be a cool taste, and thus counterbalances the action of spices.

Bitterness is appreciated, and may be quite strong. It is characteristic of cola nuts, which are heavily consumed. In food, it is provided by a sort of indigenous eggplant.

This analysis is quite superficial, but it does suffice to indicate the existence of a culinary heritage which has proved to be extremely stable. This heritage adjusts to the specific resources and constraints encountered, makes the best of the new foods to which city life gives access (bread and noodles, for instance), plays on the fluctuations of the marketplace, and takes women's new demands into consideration (the adoption of rice is an outstanding example of this). But it safeguards its crucial defining

aspects, with respect to both the perceived relationship between food and health, and a particular appreciation of taste.

A look at these findings points to one definite conclusion : dietary practices are an integral part of a context which extends far beyond simple individual routines based on habit. They are the expression of a compromise between a multitude of needs. First, the implementation of economic strategies takes the constraints and the incitements of the marketplace into consideration. There is also the concern with maintaining community ties, which occasionally seem to weigh on people, but which also guarantee a degree of security. There are women's aspirations to easier working conditions, as well, and last, a degree of loyalty to the traditional, inherited dietary norms.

CONCLUSION

If these practices are to be understood and an attempt made to influence them, we must be aware of this complexity.

What lesson may be drawn from the information collected at this stage of analysis? What direction should be preferred for any further efforts at understanding the situation? One main conclusion is evident : social and cultural factors are seen to be decisive in determining the way the food and diet problem is solved. Disparities in infants' nutritional status therefore cannot be dealt with using material and economic criteria only (that is, the economic status and living conditions of families).

Given this overall framework, several elements may be seen as constants in the local system.

Cooking techniques are still very demanding in terms of manual labour, and the utensils and cooking processes (wood-burning fire) are very much the same irrespective of the family's economic status.

Modes of access to food are extremely varied (home preparation, market, gifts).

People utilize subtle strategies taking technical constraints (time, in particular) and financial ones (relative costs) into account, within which very refined criteria operate in making assessments.

Preparation of the family's food remains communitarian in nature, with a well-defined distribution of roles and responsibilities (between husbands and wives, and between wives with different statuses belonging to a same household), and this limits individual initiative.

Networks of exchanges outside of the immediate family contribute considerably to redistribution and food security.

Women play a key role in obtaining complementary resources for their family.

While the family's financial situation may have repercussions on children's nutritional status when penury is extreme (zone 5), it seems that social factors may be decisive as soon as the weight of economic constraints is ever so slightly alleviated.

When poverty does not confine on total want and on complete physical and moral distress, the personal role played by the mother (or by her surrogate) may be essential in securing an acceptable dietary level for her infant.

Several possible paths to be followed in a more detailed investigation of mothers' situation and their ability to deal with it are suggested by the information at hand. Three possible differential factors will be discussed here.

First, the extent of the mother's autonomy within the family may be considered : how much does collective pressure - possibly conflictual - weigh on individual initiatives with respect to food preparation?

Next, there is the question of the woman's isolation or her participation in networks of exchange and solidarity exceeding the immediate family circle (exchanges of cooked dishes, help received from friends or relatives...).

And last, there is the ability to participate actively in the process of obtaining food, especially through a small business such as the sale of ready-made dishes.

It does not seem advisable to add the analysis of mothers' social situation to the topics studied, and at this point a research/action approach is appropriate. Indeed, enough is now known about women's everyday experience to be able to engage a dialogue which will be much less obscured by simplistic biases, more open and able to listen to what they may say about the constraints entailed by their role as mothers.

Through this dialogue, some first concrete actions appropriate to a range of different situations may be identified, and a better understanding of the complexity of the situation, affected by a multitude of logics, may be achieved.

Some information pertaining to the third level of analysis - the specific environment of infants and the mothering practices with respect to them - is still lacking, on the other hand.

While it does indeed seem evident that the existence of solidarity networks tempers the penury affecting infants in impoverished families, the very mediocre nutritional status of infants from affluent families indicates the existence of some risk factors that are more specifically connected to specific behaviour with respect to children, rather than to the overall conditions affecting access to food.

Concrete observation of these practices is required, then, if appropriate proposals are to be formulated.

MOTHER-CHILD RELATIONS

Levels \ Axes	Demography, health	Living conditions	Social life	Economy
City				
Household				
Child	X	X	X	

A complete study of mothering practices would require a longitudinal follow-up study of a sample of mother/child dyads during the long weaning period (18 to 24 months). However valuable research of this type may be, it exceeds the present objectives, and above all the amount of time available for a study preparatory to an intervention project. If it were to yield all of the information to be expected of so thorough an observation, it would have to cover the entire range of practices affecting hygiene, care, food and diet, but also emotional relations, learning and play - that is, the entire grid shown at the beginning of this exercise - or at the least, everything that affects the physical integrity and health of infants, their material and social environment.

We must confine ourselves to a shorter study then, with the realization that its findings may raise questions susceptible of guiding subsequent observations (especially during home visits) once the programme has been launched.

On each weekly visit to the 30 households followed up, infants' daily food intakes were recorded (those actually seen and those reported retrospectively), with notation of the type of food, an approximate assessment of the amount (using local measuring systems, since this is not a nutrition survey) and determination of the origin (home prepared, purchased, gift). At the end of the 5 weeks of weekly investigation, 4 additional visits were made, once a month. This brought the total observation period to 6 months.

Simultaneously, mothers' behaviour toward their child (type of feeding, carrying on her back, play) was also observed, and information was collected on where the child had spent the night ; non-directive discussions were held with mothers and the other women present in the household as to their views about children's diet, weaning, diseases and how to deal with them.

PERCEPTION OF MALNUTRITION AND DISEASE

Talks at MCH centres, group and one-to-one discussions all clearly indicate that malnutrition as such is not a perceived notion. In fact, this non-recognition is a particular instance of conceptions of health and disease in general. Health is perceived as the outcome of a complex, highly unstable combination of many components. Some are material ones, pertaining to the human body basically viewed as housing the circulation of humours (blood, phlegm), the flow of which regulates the amount of energy conditioning the balanced functioning of the main organs. A number of causes - the main ones being diet, way of life, the climate, emotions - may disturb this subtle equilibrium. Specific healing practices, and especially blood-letting and the use of certain plants, are used to modulate the intensity of the energy accumulated in the body.

The other immaterial components may be divided into two broad categories, between which there are many interrelations. First, good

health involves the ability to offer resistance to disturbances caused by evil intentions. Such intentions may come from supernatural creatures who are prompt to seek revenge or to express envy (deities from the ancient ancestor cult, to which more syncretic types of spirits have been added) or from "soul-eating" sorcerers, but also, more prosaically, from the vindictiveness or jealousy of the people around one. The risk of disease of any kind is closely linked to the person's vulnerability when faced with these aggressions. The best prevention against this involves the consolidation of one's internal defenses by fortifying one's innermost strength through the use of appropriate potions (taken in the form of decoctions, fumigations, unguents and ablutions) and warding them off by wearing talismans. Next, peace of mind and of heart are also essential for preserving good health. This is achieved by harmonious social integration, respecting the community's norms for behaviour, and material success, embodied in the number of offspring just as much as in the accumulation of wealth.

This means that disease is not immediately perceived as the result of a causal factor which may be singled out, then, but as the disturbance of an overall balance, which upheaval cannot occur unless several sources of risk are combined. A connection is of course established when an identifiable physical aggression with direct consequences occurs (a fall and injury, to take the most obvious example), but the empirical observation yielded by concrete experience does not in any way explain the reasons underlying the occurrence of the event, nor why its consequences are serious or minor in this particular instance. The absence of explanation, which epidemiologists attempt to replace by the abstract concept of chance, is filled in this case by the invocation of intentionality.

The composite nature of aetiological explanations here explains why no single type of treatment is presupposed for any disease. Western medicine may provide a remedy for its organic manifestations, but it has no effect on the causes, and when the latter are powerful they make light of the palliatives afforded by science. The seriousness of the causes is shown by the duration of the disorders and their recurrent nature. The fact that people often resort to a variety of healing techniques (home remedies, modern medicine, various types of traditional treatments, in different combinations and sequences) is not the result of an irrational, uncontrolled avoidance behaviour, but rather, it is perfectly coherent with the underlying aetiological theory.

In this explanatory system, infants are in an extremely vulnerable position. These tiny, unfinished, weak (that is, with no personal strength) creatures are viewed as particularly exposed to attacks of all sorts, be they material or immaterial. Until the child has achieved some degree of autonomy, he/she is in a state of reprieve, so to speak. A physical shock, but even more, an evil will, may easily get the best of him/her. For this reason mothers literally cover their infants with charms of different types and shapes (belts, bracelets, pendants) which are supposed to prevent the wide range of aggressions to which they are exposed.

Infants may be ill, then, but the course of the disease is never easy to control. Some mothers see themselves as pursued by bad luck, for instance : none of their children survive. It is not their behaviour as mothers that is involved here, but some evil power of which they are victims. One way of outsmarting its arrows consists of giving the child a false identity to hide his/her true filiation : he/she is then said to be worthless, a slave, and given the facial scars of another clan.

In this context, the series of signs clinically connected with the overall picture of malnutrition (wasting, diarrhoea, vomiting, refusal to eat) are usually interpreted as a normal phase in the infant's growth, a difficult pass (in the strongest sense of the term) generally coinciding with teething. Traditional remedies (decoctions of plants, the receipts for which are transmitted from mother to daughter, charms, sourates from the Koran) are used to prevent or check this type of disorder. When the situation gets out of control and the child's health is seriously threatened, the connection with the child's diet is rarely made : the problem tends to be ascribed to outside aggressions which take advantage of a phase of increased vulnerability.

During home visits, the health status of infants, as well as the parents' reactions were observed and methodically recorded. These confirm the fact that while fevers and skin ailments suggestive of measles generally result in relatively rapid recourse to the clinic, the same is not always true in case of weight loss, or even diarrhoea.

As a general rule, the mother is in charge of the health of her young children, at the day-to-day level : she purchases charms and magic protections, takes care of bodily hygiene (children are usually washed every day), and maintains close contact through which abnormal signs such as fever, rashes or diarrhoea are easily noticed. In most families, the husband must be consulted and his consent obtained if a solution involves anything outside of simple home remedies, and if an outside consultation - and especially one at the clinic - is required.

Within the framework of this shared attitude toward disease, reactions vary considerably from one family to another. Certain children are almost "overprotected" by their mother, who takes them to the clinic at the slightest abnormal sign, while others seem to be neglected. The qualitative comparison of these situations indicates the need to seek explanations for these differences. First, a look may be taken at the mothers themselves : one salient category includes mothers who have lost a great many children, and whose present child is also in poor health. They are often somewhat apathetic, withdrawn, perhaps as the outcome of a long history of misery, but also occasionally because of rejection by other members of the family, and by the other wives in particular. The identification of these "at-risk" mothers, by systematic recapitulation of each woman's past history of childbirths and deaths, may be valuable for the detection of these women, for whom special individual support may be quite beneficial (cf. box p. 52).

An "at-risk" family

(Example of a comprehensive observation card)

A... is 38 years old. She has given birth to eight children ; four died. According to her, two died of a fever at the approximate age of 6 months. One girl died at age 5 following a period of illness that began during the weaning period. One boy died shortly before age one, following episodes of diarrhoea.

She gave birth during the survey, and her previous child, S..., the boy being monitored, was 26 months old at the time. He had been weaned immediately when her pregnancy was noticed, that is, at about 17 months.

S... suffers from sickle cell anaemia and acute malnutrition. He has never been immunized : A... believes that God "is the only vaccine that gives protection".

A... is the first wife of a marabout. I..., the second wife, is also an "at-risk" mother : 5 of her 8 children have died.

The household's economic situation is most precarious. The husband is supposed to give 75 to 100 FCFA to each of his wives daily for the children's food, but he himself is dependent on gifts given in exchange for the Koranic teaching he does, and for his services at funerals, marriages and baptisms in the neighbourhood, and he has not received anything lately. A... is therefore obliged to fend for herself, by selling measures of milk and sweets.

While the rooms inhabited by the family are quite clean, the courtyard is extremely dirty, and soiled with animal excrements and rubbish. There is no running water. The latrines are rudimentary, and are combined with a small washroom area. The rent for this arrangement is 2,500 FCFA a month.

The mother does little to improve her children's health. During the survey period S... had several ailments (diarrhoea, severe pains in the joints), but she did not bring him to the clinic, nor did she attempt to treat him by either traditional or modern methods. A... and her co-wife are cloistered, and are not allowed to leave the courtyard without their husband's explicit authorization, and he is very reticent about giving his consent.

Whenever a worker visited the home, S... was seen to be dirty, lonely and sad. The last-born seemed to receive more attention (it was breast-fed and carried on the mother's back), but was not taken to the MCH consultation.

On one occasion, another of the father's children, about twelve years old, had been sick for several days. He was lying on a mat in one of the rooms, with no blanket, shaking with violent bouts of fever. The father refused to have him taken to a consultation.

There is no proof that the treatments prescribed for any of the family's children during these visits was effectively administered.

Another factor that seems to contribute to the absence of an appropriate response to disease is the family's economic status. As we have seen, there is not necessarily a close link between economic level and infants' nutritional status. When disease strikes, however, lack of money and consequently, the financial inability to purchase drugs may discourage mothers and dissuade them from going to the clinic.

A third element is the role of the father. In a number of cases, lack of reaction to a bout of disease may be imputed to a negative reaction by the head of the household : because he prefers traditional healing techniques and/or refuses to have his wife leave her home, on religious grounds.

Cultural factors and a mother with greater autonomy within her home may affect the child's nutritional status ; another look at the data collected during the first phase of the survey of households (chapter 3) shows a significant link between attendance of school by the mother (but not by the father) and improved nutritional status for children.

EVOLUTION OF NUTRITIONAL STATUS :THE CRITICAL PERIOD

The second year of life is a particularly critical period in the evolution of infants' nutritional status. The number of children with severe malnutrition then rises sharply : it doubles between the 7-12 month period and the 13-18 month period, and remains high between 19 and 24 months. This pattern is well known, and the existence of this peak is often believed to be connected with weaning. A detailed study yields a more complete picture of those maternal practices which may make their infants more vulnerable to malnutrition.

Infant diet

One often-heard assertion about weaning practices in Africa is that weaning is very sudden, and therefore particularly traumatic. Home visits, and the observations collected at that time, make it possible to monitor behaviour closely, and to go beyond such a priori assertions.

Figure 34 charts the food received by children during the observation period (5 monthly visits).

Each line represents one child. The right-hand column shows his/her age at the start of the survey.

Each column corresponds to one type of food, and the black dots represent intakes noted during visits (5 points mean that the food was eaten at each visit ; a single point means it was only eaten once ; none, that it was never seen).

Foods that are underlined were purchased. In the case of rice, both sources - purchasing or home preparation - are possible.

When porridge is purchased, the vendor is a woman who has made this her business. Its preparation is very rapid, but the flour is insufficiently cooked, since this receipt is chosen by the vendors in order to reduce their wood-burning expenses, and thus make their business more profitable.

Aside from slightly more frequent purchases of meat, fruit and vegetables, no major difference was seen between affluent families

RICE	PORRIDGE*	DOUGH	FRITTER	MEAT	FRUIT	BEANS	MANIOC	VEGETABLE	BREAD	BREAST	PORRIDGE°	AGE (MONTHS)
										●		<1
										●●		<1
										●●●		<1
										●●●		<1
										●●●●		<1
										●●●●		<1
										●●●		<1
										●●●●●	●	<1
										●●●●●	●	<1
										●●●●●	●●	<1
		●								●●●●●	●●	1
										●●●●●	●	1
										●●●●●	●●	1
										●●●●●	●●	2
	●			●						●●●●●	●●	2
										●●●●●	●●	2
●●		●●								●●●●●	●●	2
●	●			●●						●●●●●	●	3
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●			●	●			●			●●●●●		6
●●●●	●	●●●		●	●					●●●●●	●●●	6
●●●●	●●				●	●	●●	●		●●●●●		7
●●●	●●●	●●●	●●●	●●		●		●		●●●●●	●	7
●	●●	●●	●●	●						●●●●●	●●●●	9
●●●●	●●	●	●●		●●	●	●	●		●●●●●	●	11
●●	●●●	●●		●	●●	●●●●	●			●●●●	●●	11
●●●●	●●●	●●				●				●●●●	●	13
●●●	●	●●●		●●		●●●	●	●		●●●	●	13
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PORRIDGE* = home-made ;
PORRIDGE° = purchased

Figure 34 : Food eaten daily by children.

55

and those with low incomes. The poorest people, on the other hand, resort almost exclusively to marketed goods, and then again only buy staples (rice, fritters...).

These findings call for several important remarks. First, diet is diversified at an early age : the process begins as early as the 4th or 5th month, and involves some variety of foods. The amounts may be minimal, and purchases occasional, but a concern with diversification is nonetheless clearly present. These concrete observations do not corroborate the hypothesis of a sudden change from breast-feeding to an adult diet.

Exclusive breast-feeding by the mother is interrupted once the child has been gradually accustomed to other food. Purchased porridge continues to be given for several months after breast-feeding is discontinued.

Ready-made dishes are a major source of food. When mothers wish to complete or diversify their infant's diet, they usually do so by purchasing dishes such as porridge. A definite connection may be seen between this practice and the previous remarks about the varied sources of the family diet, as well as with the remarks on the weightiness of family behaviour with respect to kitchen practices. This leads us to wonder about possible targets of nutrition education : perhaps a positive impact on the health status of infants might be achieved by improving the quality of purchased food.

The dietary pattern is hardly affected by the family's economic status : as we have seen, it is regulated by a number of widely shared representations pertaining to food and health, which are independent of any criteria linked to monetary resources. However, the improved nutritional status of infants whose mother had attended school does indicate that mass education may well induce some change in these conceptions, and in the attendant practices.

Weaning does effectively coincide with a critical phase in infants' nutritional status ; nonetheless, the situation does not seem to be as simple as these a priori assertions would have it. The end of breast-feeding is certainly a shock for infants, and the complemental food - and later the substitutes - received may not be fully appropriate to his/her needs. It is nonetheless a fact that the transition from an exclusive milk diet to one that is similar to the adult diet takes place very gradually, and that the vast majority of those mothers studied were aware of the need to avoid a sudden changeover.

This finding seems to indicate that the dietary change is perhaps only one of a number of modifications to which children are subjected during this critical period.

Evolution of the mother/child relationship : an emotional break

The observation of mothers and their infants in their everyday setting, in the course of long, repeated visits (which may last several hours when discussion is lively), yields an opportunity to notice things and to collect information to which one would not have access otherwise. This is the case for mother's ordinary behaviour,

as expressed by the innumerable minute gestures that knit the physical and emotional ties with their child. How does feeding take place, for instance : whether the infant is fed by the mother - at the breast, of course, but also using a spoon if porridge or other foods are given, whether he/she is given help - by the mother or someone else (co-wives, or brothers and sisters) or left to manage by him/herself. Play too is worth observing. Some mothers engage in much play with their infant, rocking and bouncing him/her, provoking his/her laughter, whereas others practically only take care of specific needs. Furthermore, this type of behaviour changes with the infant's age. African infants are commonly carried on their mother's back : this is an opportunity for physical contact and intimacy between the mother and the baby, who participates in all of her activities and is never alone.

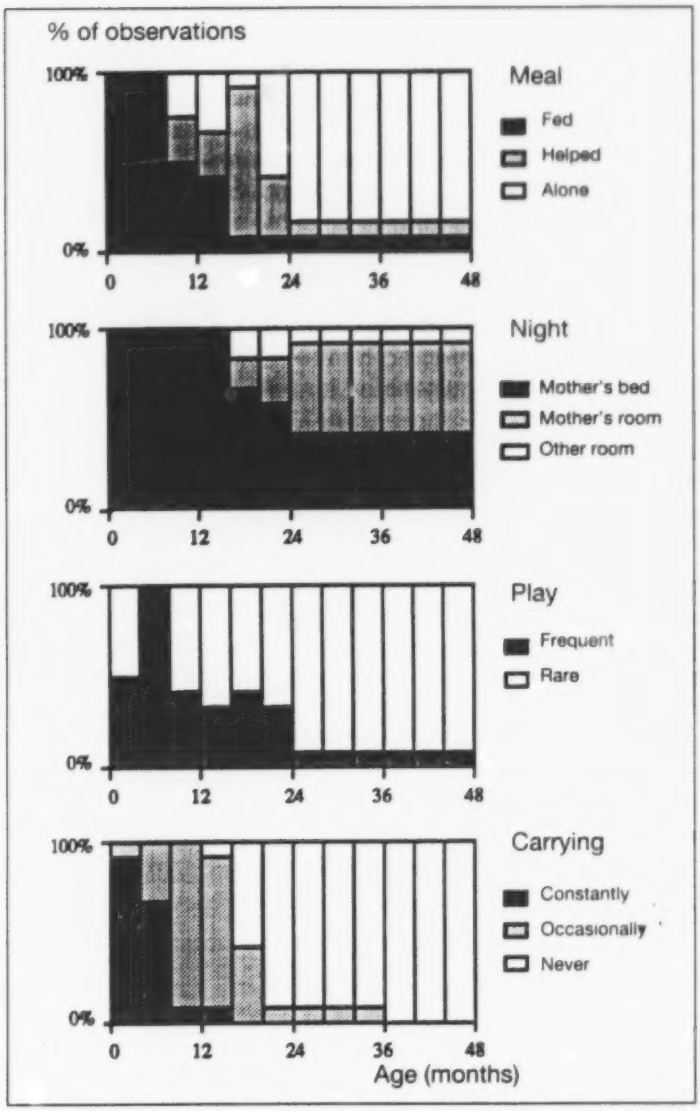

Figure 35 : Mother/child relations : everyday motions.

Another significant piece of information pertains to where the infant sleeps at night. Many mothers keep their baby in their own bed during the first months, then gradually move them out : at first the child remains in the same room but in a separate bed or on a mat. Only later will he/she be sent to another room, often to be shared with some brothers and sisters. It is of course difficult to observe this attitude directly, and we must generally rely on the mother's statements.

Observations on these points may seem uninteresting and superficial, but when structured and pieced together, they yield valuable information on the overall interpersonal context with which the evolution in the infant's health status is connected.

Figure 35 illustrates the evolution of the behaviour of the mother and of other people surrounding the child in the four spheres mentioned. The scale used corresponds to the percentage of the reference behaviour in relation to the number of visits, for children in the different age groups.

One major feature stands out when these data are analysed : a series of breaks in the mother/child relationship occur during the second year of life, then again after age 2 years. First, the child is separated from his/her mother at night, at a time

when he/she is increasingly infrequently carried on her back. Next, they no longer play together very much, and the child is practically left alone at mealtime. Weaning is far from representing the only disturbing factor during this period, and it is one element in a context of deep upheaval in the infant's overall emotional and interpersonal experience.

The occurrence of a break of this type is usually not caused by the mother's detachment or negligence ; to the contrary, when her 16 to 20 month-old infant has just stopped suckling, she makes special efforts to help him/her with eating. The real reason is, partially, tradition : during the weaning period, children are often physically cut off from their mother and entrusted to a woman relative. Another factor, in many cases, is the increased work load brought on by another pregnancy. The average interbirth interval is somewhere around 2 years, but it is often lower. Premature weaning because of another pregnancy is quite frequent.

The visits to homes at regular intervals yield a wealth of information on a variety of subjects, including hygiene and housing, social relations within the family and relations with neighbours : we will confine ourselves to the few points presented here, however. They are amply sufficient indication of how much information may be drawn from methodical observation, flexibly conducted but using some well-defined guidelines which are applied to every family at each visit. This enables us to make some notations which might seem uninteresting, taken separately, but affords some points of comparison and classification.

We have described some general findings, which are typical of an ordinary situation. Actually, enormous individual variations may exist for the various criteria mentioned (diet, description of some features of the mother/child relationship). Each case is of course unique, but some extreme types may be defined. In some families internal tensions (between husband/wives, between co-wives) or external ones (with the neighbours or relatives) abound, the mother's everyday relationship with her infant is greatly disturbed, dietary diversification is minimal and weaning is rather brutal, childhood illness is not countered by any active response other than the customary preventive practices (no recourse to either modern medicine or traditional healers). Conversely, there are well-integrated families which maintain complex ties with their neighbours, in which the mother/child relationship develops in a relatively harmonious environment, where the child's diet is diversified at an early age, and extensively so, where the entire range of available therapeutic means (home remedies, traditional healers, clinic) is called upon to combat any threat to children's health.

Aside from cases of extreme dearth, where poverty may go hand in hand with a severely disturbed social and family situation (as is the case in the outlying areas where people fleeing the drought are concentrated), no link is found between a family's financial resources and the patterns described above.

There is a wide range of different situations between these two poles, and very few actual cases completely resemble one extreme or the other. Situations may be sorted out, however, and classed as being closer to one end or the other, with a separate group for those which are too ambiguous to be put in either category.

A simple typology of this sort, however rough, may already be helpful in identifying those situations in which children are at greatest risk, and in guiding efforts to understand and help them so that they will be better adjusted to the real-life experience of the protagonists.

FROM UNDERSTANDING TO ACTION

We now have a full vision of the material, economic, social and cultural environment of city-dwelling infants, thanks to the information-collecting process described here.

Our approach has been a progressive one : we started with the city viewed as a whole, so as to determine the main constraints and dividing lines possibly affecting children's environment. Next we focussed on the everyday setting in which they live, so as to achieve a better understanding of the concrete situation within which families work at solving the food problem. Last, we centred our attention on infants themselves, and more specially on their relations with their mother, on whom they depend almost exclusively for food and health during the very first years of life.

At each level of analysis, we made every effort to include the health, material, social and economic facets of the situation. We also concentrated on evidencing those specific indigenous cultural conceptions and conceptual frameworks which underly the observed practices and make them meaningful.

Our entire approach is predicated on the following key idea : the need to go beyond a strictly individual, behavioural approach to the problem of infant diet and nutrition. While many children are poorly or insufficiently nourished, this is not exclusively, and probably not even essentially, due to their parents' ignorance or negligence. If this were the case, adequate information and training would suffice to modify behaviour, and this, as we know, is not so. These adults find themselves hemmed in by a multiplicity of constraints (material, technical, economic and social), which they attempt to reconcile through intricate, precarious strategies. Any change operated in their practices, however limited its portent, in appearance, may well dangerously disturb a balance achieved at the cost of great effort.

The examples given throughout this document were almost all aimed at illustrating these constraints and strategies, and showing how they may be uncovered.

WHAT WE KNOW

Let us attempt to summarize what has been learned at each level of analysis with respect to each of the broad angles from which we have viewed the situation of city-dwellers.

The city as a whole

Demography

Three main introductory findings must be mentioned in the field of demography and health : the exponential growth rate of the population, the extremely high proportion of infants (over one fourth of the urban population is under age 4), their poor nutritional status (only half of them have a satisfactory nutritional status).

Malnutrition is not evenly distributed : some neighbourhoods are much more severely affected than others, especially those inhabited by people who came there to flee the drought (a scant fourth of infants have an acceptable status).

The city has a relatively closely knit health infrastructure, although the northern neighbourhoods are definitely underequipped. There is also a degree of disparity in the manpower and equipment available in clinics, and in the quality of their work.

General setting

The most important point with respect to the material environment is the fact that while the urban environment is well managed, on the whole, there are significant geographic differences with respect to infrastructure and public sanitation. Considering the financial restrictions imposed on every department, the development of pathological conditions tied to the quality of water and sanitation may be feared for the future. There are also visible economic gaps: some neighbourhoods and residents show visible signs of a degree of affluence, whereas others clearly live in the most extreme misery.

The social aspect

The city is extremely homogeneous ethnically, culturally and religion-wise. Family and neighbourhood traditions of solidarity apparently subsist in the oldest neighbourhoods, and some traditional forms of social and political control remain operational. However, there are major differences in this respect between the oldest parts of the city, which are the heirs to a precolonial urban tradition and the newer zones which ring these, and are essentially peopled by new residents from different backgrounds.

The economy

The main feature of the economic situation is the existence of a single - and, in fact, vulnerable - sector capable of producing any sizeable income : that is, more or less illicit exchanges across the neighbouring border. The wage-earning sector is minimal. The vast majority of city residents lives from hand to mouth, through work in "informal" services and trade, the function of which is to circulate and redistribute part of the money and goods entering the city. These people are terribly dependent on a highly speculative subsistence food market. In view of the local and national juncture, there is every reason to fear further pauperization of the urban population and increasingly heavy economic constraints, which in turn will weigh on the solution of the food problem.

Households

Infant's nutritional status is found to vary considerably from one household to another. These differences do not coincide noticeably with economic inequalities. Where food is concerned, children's health seems to be much more closely linked to some features of the family environment which cannot be simply deduced from its material setting. There is also considerable heterogeneity in the size and structure of family units : whether or not several families cohabit within a given residential compound, whether several generations are present, whether the husband is polygamous or monogamous, are all factors which affect the organization of the everyday social and economic situation.

Demography

General setting

On the material and technical level, a close analysis of food preparation operations shows that they represent heavy constraints in terms of time and work load, and also contributes some indications which are helpful in understanding the bases underlying strategies for the production of cooked dishes. Time and the fuel supply are seen to be specially crucial constraints.

The social aspect

From the social and cultural standpoints, two important points should be emphasized. The first involves the continued presence of the ancient frames of reference for food : over and beyond some flexibility in the types of food used, this means that diet is very much the same from one family to another, despite differences in economic status. The second pertains to the often collective nature of food preparation and of management of how it circulates : work-sharing among women and meals taken in common reduce the autonomy enjoyed by mothers. Furthermore, their participation in exchange networks makes the solution of the food problem an affair involving extended social networks based on neighbourly relations and mutual aid.

The economy

In the economic sphere, the most important point is the very great reliance on the market for access to food. Since there is little - and in most cases no - home agricultural production, food staples are purchased. This makes dietary options extremely sensitive to fluctuations in prices. Given the technical, financial and social constraints connected with the making of food, the purchasing of ready-made dishes affords some degree of flexibility in composing the menu, particularly in the case of infants : mothers tend to use outside purchases to diversify their diet.

The mother/child relationship

Births occurring in close succession represent a major modification of the collective norms regulating reproductive behaviour. This trend may affect the mother's relationship with her infant. Pregnancy and the arrival of another baby tend to divert her attention from giving care to the previous child, and thus accelerate the separation.

In the population studied, diversification of the infant's diet actually occurs much sooner than is generally believed. While this says nothing about the quality and quantity of the complements added to the milk diet, there is a definite tendency to accustom infants to other food during their first months, and weaning occurs at the end of a long process. There are considerable differences from one family to another, however.

Strategies for reacting to disease include all of the types of recourse available in the family's environment : traditional home remedies, traditional healers, modern health units. Traditional imagery with respect to the health of the family and of infants in particular is still quite lively, and still guides these strategies : children are naturally vulnerable, and the risks they run are perceived as the outcome of immaterial causes beyond the realm of modern medicine, just as much as of physical ailments, recognized as such. Here too, the social and cultural environment produces marked inter-family differences in behaviour.

Economic factors definitely influence behaviour with respect to health and infant diet : on the one hand, much of the infant's food is bought on the market, including the porridge which is the first element of diversification ; on the other hand, the cost of medication is a handicap for the effective treatment of childhood diseases.

Here, then, is a brief summary of the main knowledge resulting from this methodical, gradual information-collecting process. What shall we do with this knowledge, in an action-oriented perspective? It is not our intention here to draught a fictitious health intervention project : different options may be envisioned on the basis of a same diagnosis, and too many of the elements needed for making a choice, including political and financial ones in particular, are still lacking.

We will simply mention some of the lessons that may be drawn ; that is, the broad guidelines for action of a comprehensive nature, and some of the types of intervention through which these may be put into practice.

UNDERSTANDING THE MILIEU : A NECESSARY CONDITION FOR DIALOGUE

A good understanding of the human milieu is an indispensable preliminary to any intervention, but it should also be pursued throughout the course of the latter. This should not be taken to mean that an accumulation of knowledge, as complete as possible, may constitute the point of departure for strict planning of change in the field of social action. Aside from authoritarian policies, the effects of which have often proved to be quite fleeting, only free acceptation by the actors themselves - in this case the women and those around them - can result in lasting change. This acceptation necessarily involves a dialogue in which the actors' real experience is taken into account. Such dialogue is rare, however, since exchanges between health workers and women often sound like normative speeches : advice and prescriptions are given, and the mothers are asked to comply. In this relationship, two worlds with mutually foreign experience and ways of thinking are face to face, and the recommendations formulated are based on general rules for hygiene and diet which are in fact miles away from the concrete problems with which mothers are faced. Although born in the same country and speaking the same language as the families they see, health workers - because of their training and social position - very often lack those references which might guide their efforts to understand the cultural, social and economic context and living conditions of families.

The observation of women's actual living conditions is indubitably a form of training for these workers : it fosters an evolution in their mentality and in the way they view the problems. For this reason, the active participation of health officials in this phase of analysis may be a very rich experience for them, most helpful in their relations with families within future action. Subsequent reflection and structuring of the experience accumulated here is necessary, so as to construct a reference framework within which the dialogue may progress. Discussion seminars may play this role. Increased awareness of the difficulties of all sorts encountered by mothers, but also of the assets they possess, may contribute to the development of constructive exchanges possibly resulting in the conception of appropriate responses to different individual situations.

From this angle, home visits constitute a distinctive source of experience, provided they are used as an opportunity for observation guided by a methodical approach. They should not be discon-

tinued at the end of the study phase, but should be pursued during the intervention phase, and used to refine and deepen observations and the exchanges already begun.

AWARENESS OF DIFFERENCES : DIVERSIFYING THE INTERVENTION

One of the major contributions of the analysis phase as described above resides in the awareness of the social and geographic differences between people within the urban population. The information collected at different levels of investigation has pointed out that the problem of infant diet and its nutrition-related consequences is posed in different terms in various parts of the city, and depends on the mother's material, social and cultural environment.

Where strategies for action are concerned, this knowledge may be used for making choices in two fields. First, it shows that resources, manpower and intervention structures should be modulated depending on the neighbourhood, in accordance with our information on the acuity of the dietary and nutritional problems there. We may, for instance, plan to aim a specific action at the outlying parts of the city, where the prevalence of malnutrition is highest and spontaneous use of health structures is lowest.

Next, it helps us to modulate the type of intervention (information, group discussion, individualized follow-up) on the basis of the mother's situation. A reference classification including points pertaining not only to mothers' individual characteristics, but also to their family environment (financial resources, housing, family structure, household structure, integration in the neighbourhood) may be set up (depending on available resources and on the objectives), so as to chart appropriate itineraries for working with each broad category of situations. An individualized counselling approach with home follow-up may be needed in certain cases, and this classification may help in pointing out those highest-risk cases for which it should be reserved.

USE OF EXISTING FORMS OF COMMUNITY ORGANIZATION

Any action aimed at helping people to overcome their difficulties has everything to gain from leaning on existing community initiatives. The preliminary study phase for the food and diet problem showed that urban families, and more specifically, the women in them, develop two types of strategies. The first entails purchasing on the market. As we have seen, much of the food eaten is directly purchased, in the form of ready-made dishes, rather than prepared at home. This is particularly true for infants, since purchased porridge is used for the early diversification of their diet. We may postulate that the popularization of receipts for enriched porridges has missed its mark so far, since it was aimed at mothers who rarely had the opportunity to apply these. A programme directed specifically at porridge vendors might be much more effective - provided the financial aspect of their activity is taken into consideration.

The second strategy is grounded in forms of solidarity and exchanges between women. Modification of individual food and diet-related behaviour encounters a number of obstacles, because of the collective dimension involved in the preparation and circulation of food. Conversely, action aimed at groups of women already engaged in cooperation might use these spontaneous forms of

organization for its own ends. Some articulation with the previous approach may be feasible : a group of women might promise to purchase an improved porridge regularly from a vendor who is prepared to make it but is afraid she will not have enough customers.

These were just some remarks on the potential utility, for action, of understanding the human milieu viewed in all of its many dimensions and at all of its many planes. We have not mentioned all of the practical conclusions that may be deduced from it, by any means, but we have attempted to show that these are of several sorts, and operate at different levels. We have developed the overall principles which may govern the planning of action and the allotment of available resources, and methodological tools for use in an appropriate intervention approach have been described. Last of all, specific themes for action have been proposed : they may be tested immediately.

Readers are warmly encouraged to pursue reflection in this direction, and to work at determining the uses, in terms of action, to which knowledge of the type presented here may be most profitably put.

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SOCIAL APPROACHES TO INFANT FEEDING IN URBAN AFRICAN SETTINGS

1992 - N° 201

Following experimentation in a city in Niger for a number of years, a crossdisciplinary team of research workers suggests a comprehensive approach for understanding family diet and nutrition problems. With the help of this team, the families themselves attempt to gain understanding of their everyday experience, and through this gradually increased awareness, to determine what improvements would be appropriate and put them into practice.

This global approach is based on an ongoing comprehension of the everyday situation, of practices and behaviour connected not only with diet and nutrition, but also with the economic, social, material, symbolic and religious aspects of life. It is presented here in the form of a step by step methodological approach, up to the intersectorial interpretation of findings.

This research provides an example which, once readapted, may be applied to other situations ; it clearly points up some features such as the effectiveness of interdisciplinary work, understanding of the environment, which is indispensable if a dialogue with families is to be established, for informational and self-training purposes, and for working with the existing community organizations.

This method clearly shows the heterogeneity of the urban social environment, despite its apparent socioeconomic uniformity. This is perhaps one possible solution for improving the efficiency of food and nutrition-related programmes, and diversifying interventions to respond to different living situations.

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